

NASA Conference Publication 10042

Twenty-Second Annual NASA Supply and Equipment Management Conference

*Proceedings of a Conference held at
NASA Kennedy Space Center
Cocoa Beach, Florida
December 5-7, 1989*

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SUPPLY AND EQUIPMENT MANAGEMENT CONFERENCE
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NASA

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National Aeronautics and
Space Administration

Supply, Transportation & Services Division

Supply Branch

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**STATUS OF ACTIONS FROM
1988 CONFERENCE**

**BILLIE WILCHEK, MANAGER
CONTRACT PROPERTY PROGRAMS
DECEMBER 5, 1989**

1988 S & E CONFERENCE ACTIONS

1. FY89 tag requirements forecast
2. Center additions to standard agency sensitive items list
3. Updated shipping addresses and transfer contacts
4. NEMS transactions use list

1988 S & E CONFERENCE ACTIONS

(CONTINUED)

5. Appeals of employee negligence and liability for equipment losses
6. NASA Form 1602 user signatures
7. Refinements to NASA Form 1602

1988 S & E CONFERENCE ACTIONS

(CONTINUED)

8. Expanded distribution lists
9. On-site contractor productivity impediments
10. Proposed method of estimating cost to sell and abandonment/destruction cost of low value surplus property

1988 S & E CONFERENCE ACTIONS

(CONTINUED)

11. Separate reporting by component
installation supply activities
12. Use of nonstocked item report data
in Federal cataloging actions

NEW AND CONTINUING INITIATIVES

8

NEW AND CONTINUING INITIATIVES

1. NASA PROPERTY DISPOSAL
MANAGEMENT SYSTEM (NPDMS)
2. NASA SUPPLY
MANAGEMENT SYSTEM (NSMS)
3. NASA EQUIPMENT
MANAGEMENT SYSTEM (NEMS)
4. NASA INDUSTRIAL PROPERTY
MANAGEMENT INFORMATION SYSTEM
(NIPMIS 3)

NEW AND CONTINUING INITIATIVES

(CONTINUED)

- 5. PERFORMANCE MEASURES**
- 6. FUNCTIONAL REVIEWS**
- 7. STRATEGIC PLANNING**
- 8. INTEGRATED LOGISTICS SUPPORT**
- 9. TRAINING**

NEW AND CONTINUING INITIATIVES
(CONTINUED)

- 10. BUDGET AUGMENTATION**
- 11. WAREHOUSING ANALYSIS**
- 12. CONTRACT PROPERTY HANDBOOK**
- 13. PRESIDENT'S COUNCIL ON
MANAGEMENT IMPROVEMENT
(PCMI) PROJECT**

S&EM General Session



- Jeff Sutton / NIE -- NSMS Functional Sponsor
- Pat Sporn / NTI -- NSMS Program Technical Manager
- James A. Forney / MSFC -- NSMS Development Installation
Project Manager
- Bonnie Hankins / BCSS -- NSMS Project Manager

**Supply & Equipment Management
Conference**
December 5, 1989

S&EM General Session

- **NSMS Development Status**
- **NSMS Installation Schedule**
- **Use of CASE Technology during NSMS Development**

**Supply & Equipment Management
Conference** December 5, 1989



(11/17/89)

Formal Draft Due
Final or Conditional Acceptance

12

**Revised 6/21/89 -- Based Upon Change Control Requests (CCR)
Resulting From the Detail Design Review (CDR).**



(beh-4/88-005.2.a)

NSMS INSTALLATION SCHEDULE -- DRAFT

(11/17/89)

SITE	1989			1990												1991			
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	
Integration				1/2			4/2												
Test Readiness Review							4/2												
MSFC (alpha test)						3/19	4/9		6/5										
ARC/Moffett (beta test)									6/11	7/9	8/22								
ARC/Dryden											9/10	10/15	11/2						
Stennis Space Center												10/29	11/26	12/14					
Lewis Research Center															12/10	1/7	1/25		
Langley Research Center																1/14	2/4	2/25	
White Sands																	2/11	3/4	3/22

- △ - Preinstallation Meeting
- ▲ - Installation and Training
- ◆ - Completion



SIP-03/89-01

NSMS General Status Workshop



- Jeff Sutton / NIE -- NSMS Functional Sponsor
- Pat Sporn / NTI -- NSMS Program Technical Manager
- James A. Forney / MSFC -- NSMS Development Installation
Project Manager
- Bonnie Hankins / BCSS -- NSMS Project Manager

S&EM - NSMS Technical Workshop

December 5, 1989

**22nd NASA Annual Supply and
Equipment Management Conference**

**SUPPORT REQUIREMENTS FOR
THE NASA MARS INITIATIVE**

A. M. Koller, Jr. DBA

22nd NASA Annual Supply and Equipment Management Conference

AGENDA

- 1. MARS -- The Objective and Its Environment**
- 2. Some Exploration Requirements For Man**
- 3. Implications for Support Systems**
- 4. Special Concerns and Opportunities**

MARS -- The "Red" Planet

Some Interesting Characteristics:

- o Fourth Planet from the Sun - second closest to Earth (Venus is closer) at 35 M miles
- o Smaller than Earth (4200 m diameter)
- o Slower in rotation (24h:37m day) and much longer year (687 earth-days)
- o Temperatures: -191F to -24F
- o Atmosphere: CO/CO₂, N, Ar, O, Ne, Kr, Xe
- o Moons: Phobos/5800 mi, Deimos/14,600 mi

MARS -- Characteristics (cont)

- o Three types of clouds**
 - Pink, probably from dust**
 - Blue, probably from ice**
 - White, probably from water vapor**
- o Gravity lower than on Earth - 3/8 g
(100 pounds on Earth = 38 on Mars)**
- o Six American and one Soviet spacecraft
have visited Mars since 1965**
- o Whether life exists or has ever existed
on Mars remains unanswered**

"DE MOTIBUS STELLAE MARTIS"

THE PLANET MARS

	MILES	KILOMETERS
Distance from sun		
Mean (1.5237 A.U.*)	141,500,000	228,000,000
Aphelion (1.6658 A.U.)	154,100,000	248,000,000
Perihelion (1.3826 A.U.)	128,000,000	206,000,000
Distance from earth		
Perihelion opposition	34,797,000	56,000,000
Aphelion opposition	61,516,000	99,000,000
Aphelion conjunction	248,000,000	399,100,000
Orbital velocity per second		
Mean	14.98	24.11
At aphelion	13.64	21.95
At perihelion	16.45	26.37*
Escape (parabolic) velocity, per second	3.13	5.04
Circular velocity at surface, per second	2.21	3.56
Equatorial diameter	4220	6780
Length of day		
Sidereal	24 hours, 37 minutes, 22.668 seconds	
Solar	24 hours, 39 minutes, 35.247 seconds	
Length of year (668.599 Mars days)	686.979 earth days	
Eccentricity of orbit	0.09336	
Mean sidereal motion in 24 hours	1886.519 seconds of arc	
Inclination of orbit to ecliptic	1° 50' 59.8"	
Inclination of Martian equator to its orbit	25° 10'	
Heliocentric longitude of node (1956)	49° 13' 05.5"	
Heliocentric longitude of perihelion (1956)	335° 14' 56.6"	
Mass (earth = 1)	0.108	
Volume (earth = 1)	0.151	
Density (earth = 1)	0.710	
Density (water = 1)	3.910	
Surface area (earth = 1)	0.278	
Gravity at surface (earth = 1)	0.38	

* A.U. stands for "astronomical unit," the distance of the earth from the sun.

Exploration Requirements

- o Travel to Mars via one of two routes:
 - "Sprint" -- requiring a high energy trajectory (~ 230 days)
 - Minimum energy "Conjunction" trajectory which uses planetary gravity (~ 500 days)
- o Heavy fuel consumption for "Sprint" requires a "fly ahead" cargo vehicle and refueling
- o Decisions on where to land, how many landings, whether to travel on the surface, and what the mission science requirements demand all will help determine the support requirements

D PLANET IN THE SKY

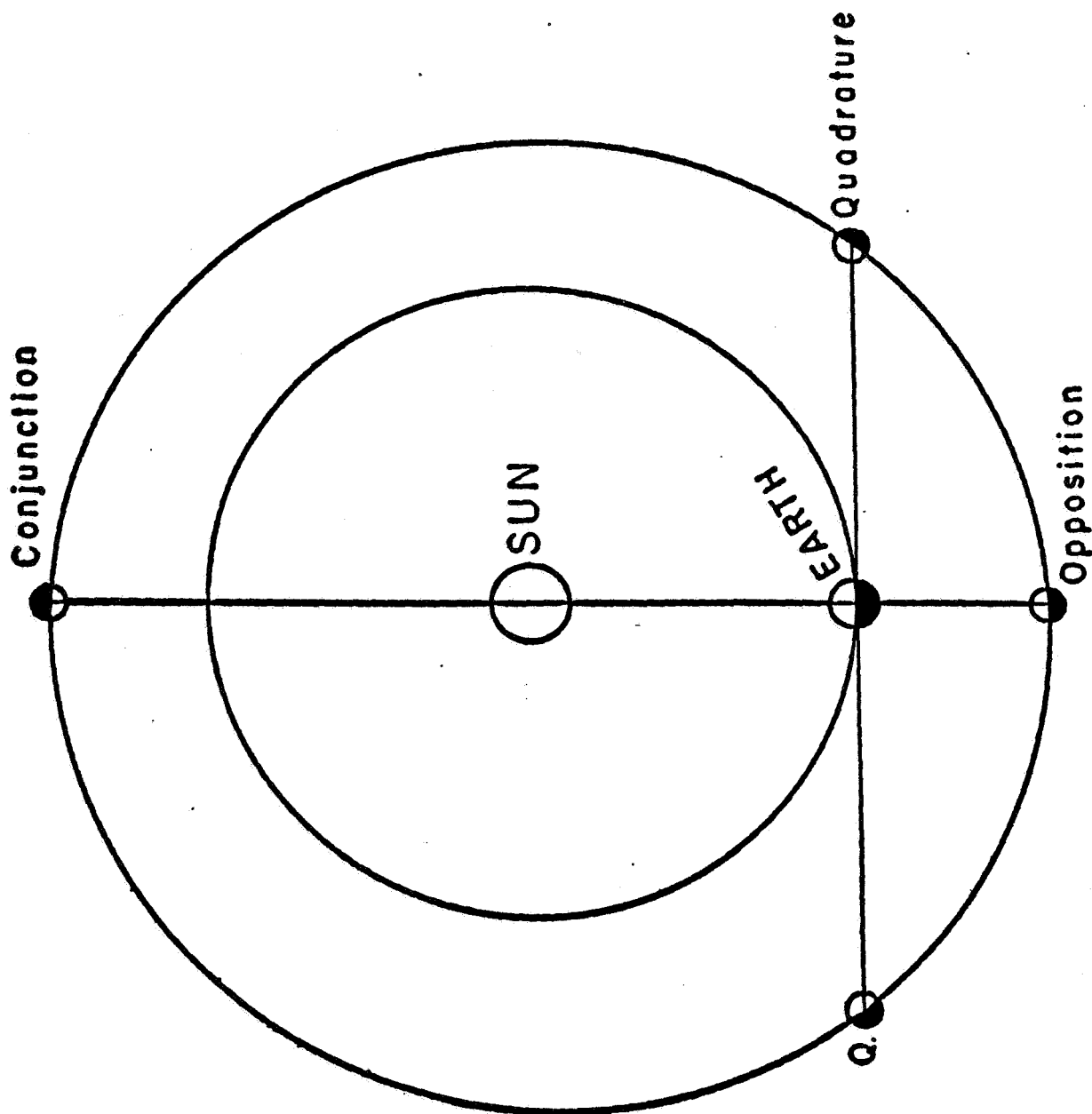
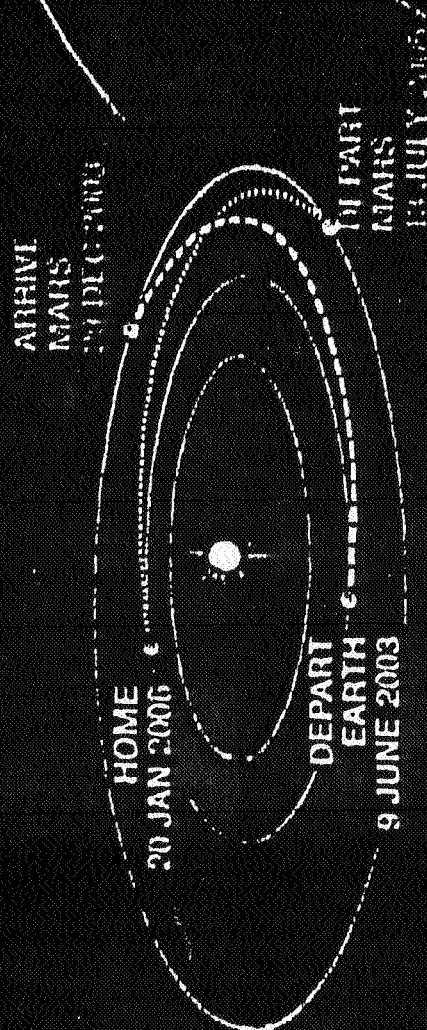
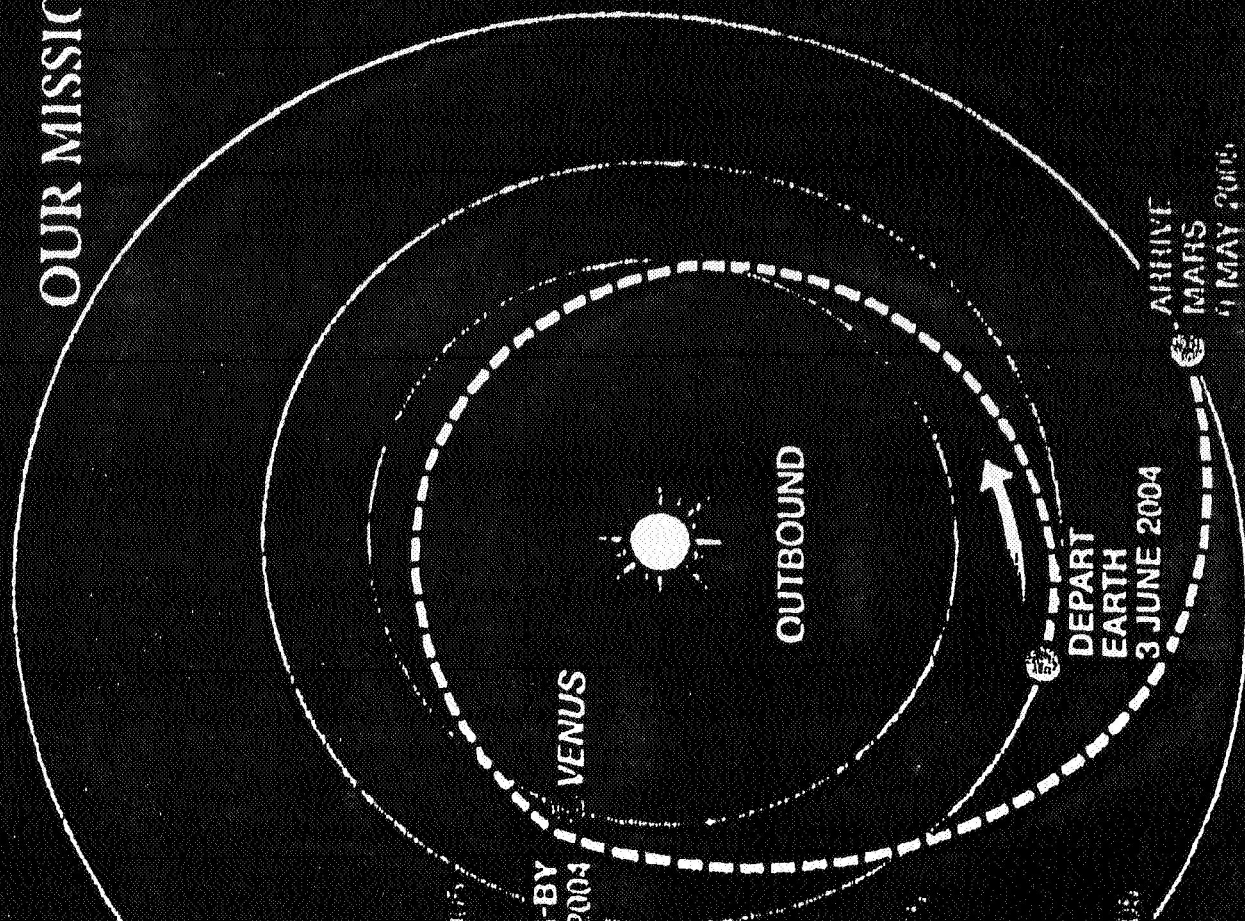


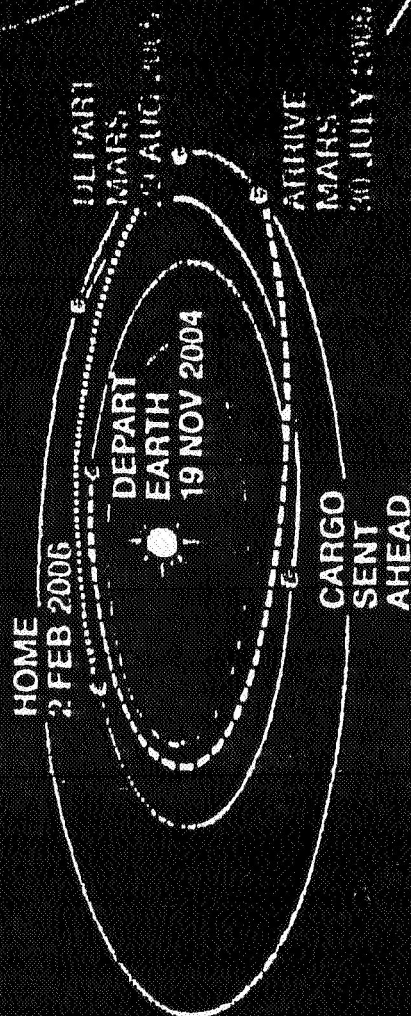
FIG. 1. The four principal positions that Mars can assume relative to earth. At conjunction it becomes invisible in the rays of the sun. The main period for observations is about from quadrature to quadrature.

OUR MISSION

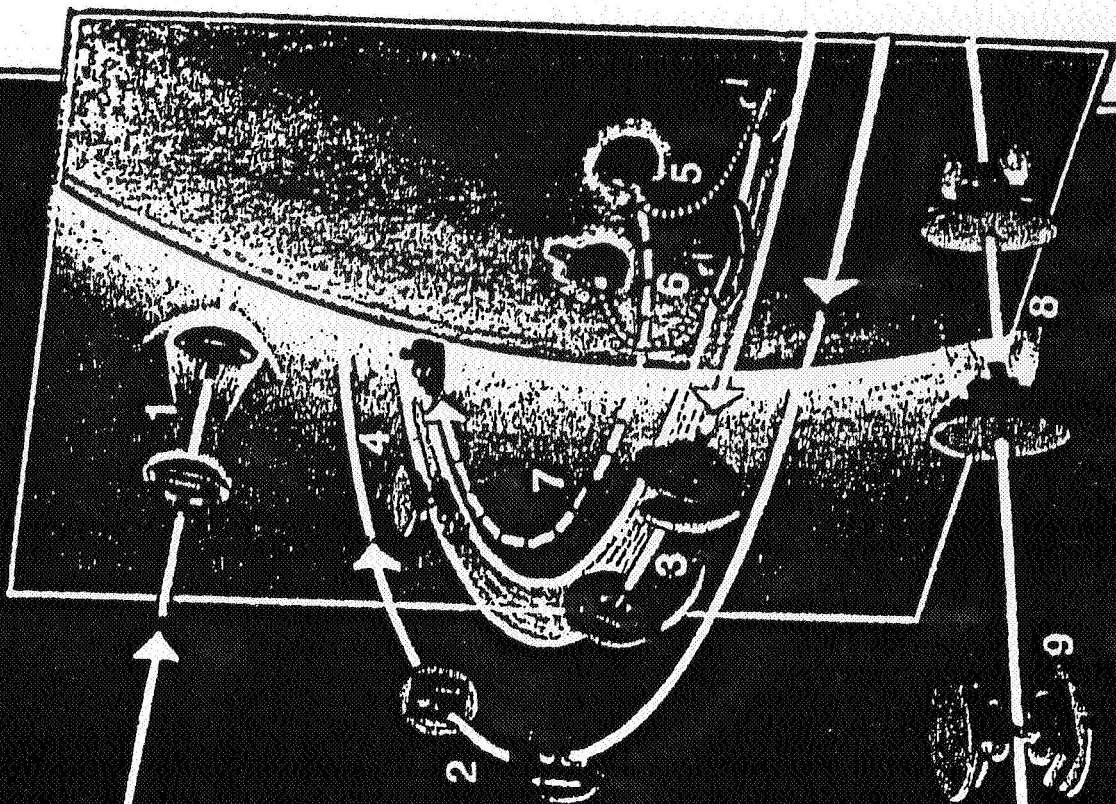
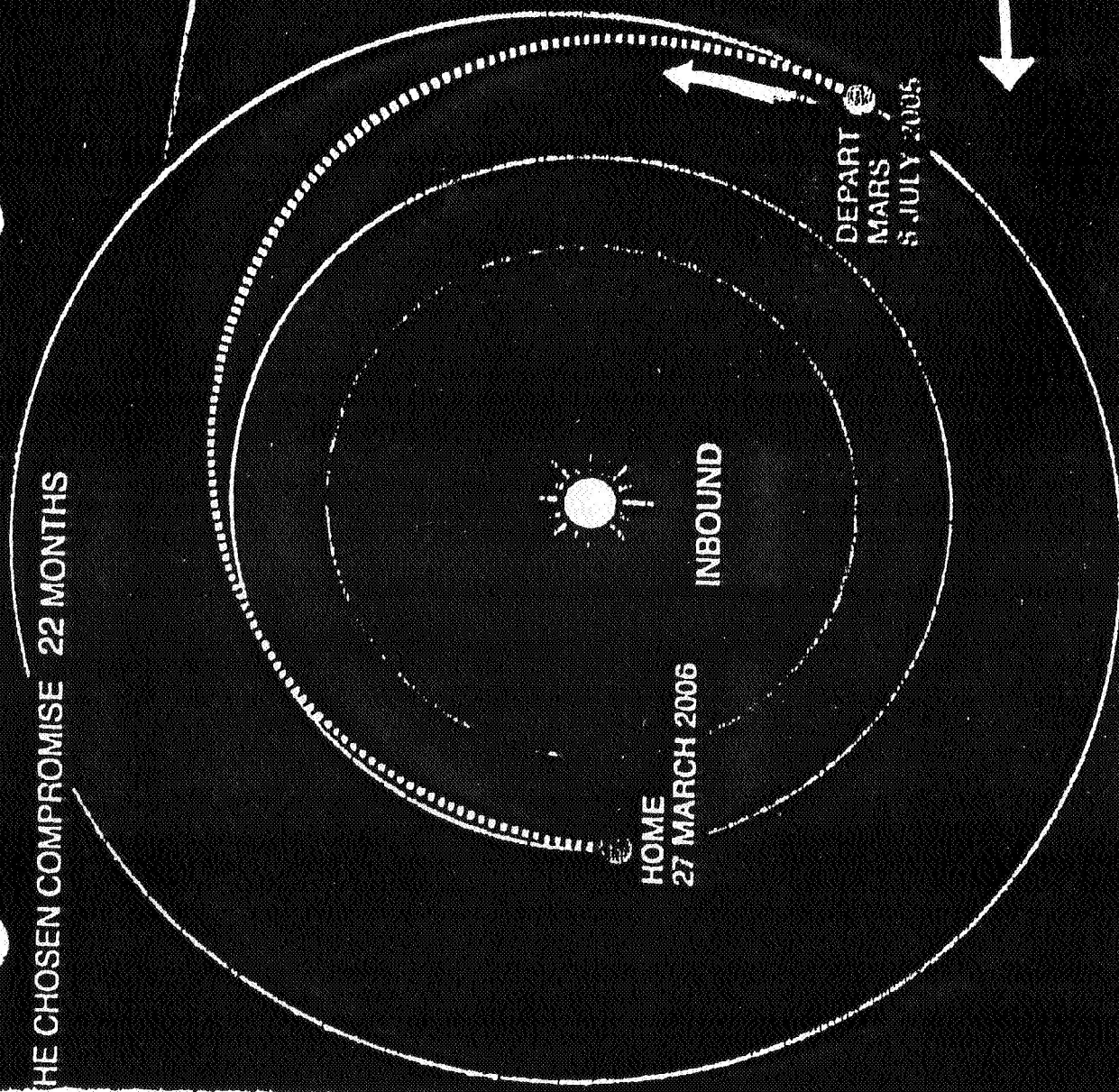


LONG MISSION
FUEL EFFICIENT 31 MONTHS

SPRINT MISSION
SHORT BUT FUEL COSTLY 15 MONTHS



THE CHOSEN COMPROMISE 22 MONTHS



MARS Exploration Requirements

- ✓ Ability to Take Everything Needed For The Trip:
(minimum 15 months, maximum 2-1/2 years -
3 pounds food, 5 pounds water, 2 pounds air
- 75,000 pounds for 8 man crew, 2-1/2 years)
- ✓ Ability to Perform a Variety of Daily Tasks:
 - Prepare Meals and Maintain Menus
 - Perform Medical/Surgical Procedures
 - Move Around on the Surface
 - Gather, Store and Analyze Data
 - Clean Equipment, Clothing and Bodies
 - Monitor Health and Well-being
 - Participate in Recreational Activities

MARS Exploration Requirements (Continued)

- ✓ Ability to Take Autonomous Actions
 - Seek Safe Haven in Emergencies
 - Perform Repairs/Replacement of Parts
 - Provide Rescue of Downed Crewman
 - Communicate with Crew and Earth
 - Monitor Consumables and Perishables
 - Reference Databases and Technical Information
 - Evaluate System Status at all Times
- ✓ Ability to Resolve Conflicts and Reach Decisions
 - Selection and Training -- including Refreshers
 - Chain of Command, Leader/Follower Roles
 - Crew Relationships and Dynamics Over Time
 - Alternative Actions and Strategies

LUNAR OUTPOST SCIENCE STRATEGY

• EMPLACEMENT PHASE

- CONDUCT LOCAL GEOLOGIC EXPLORATION OF OUTPOST SITE
- ESTABLISH AUTOMATED OBSERVATORIES WITH A WIDE RANGE OF SPECIFIC SCIENCE OBJECTIVES
- CONDUCT PILOT TESTS IN "OPERATIONAL SCIENCE" PROGRAMS
- DEVELOP OPERATIONAL EXPERIENCE IN ALL AREAS OF SCIENCE

• CONSOLIDATION PHASE

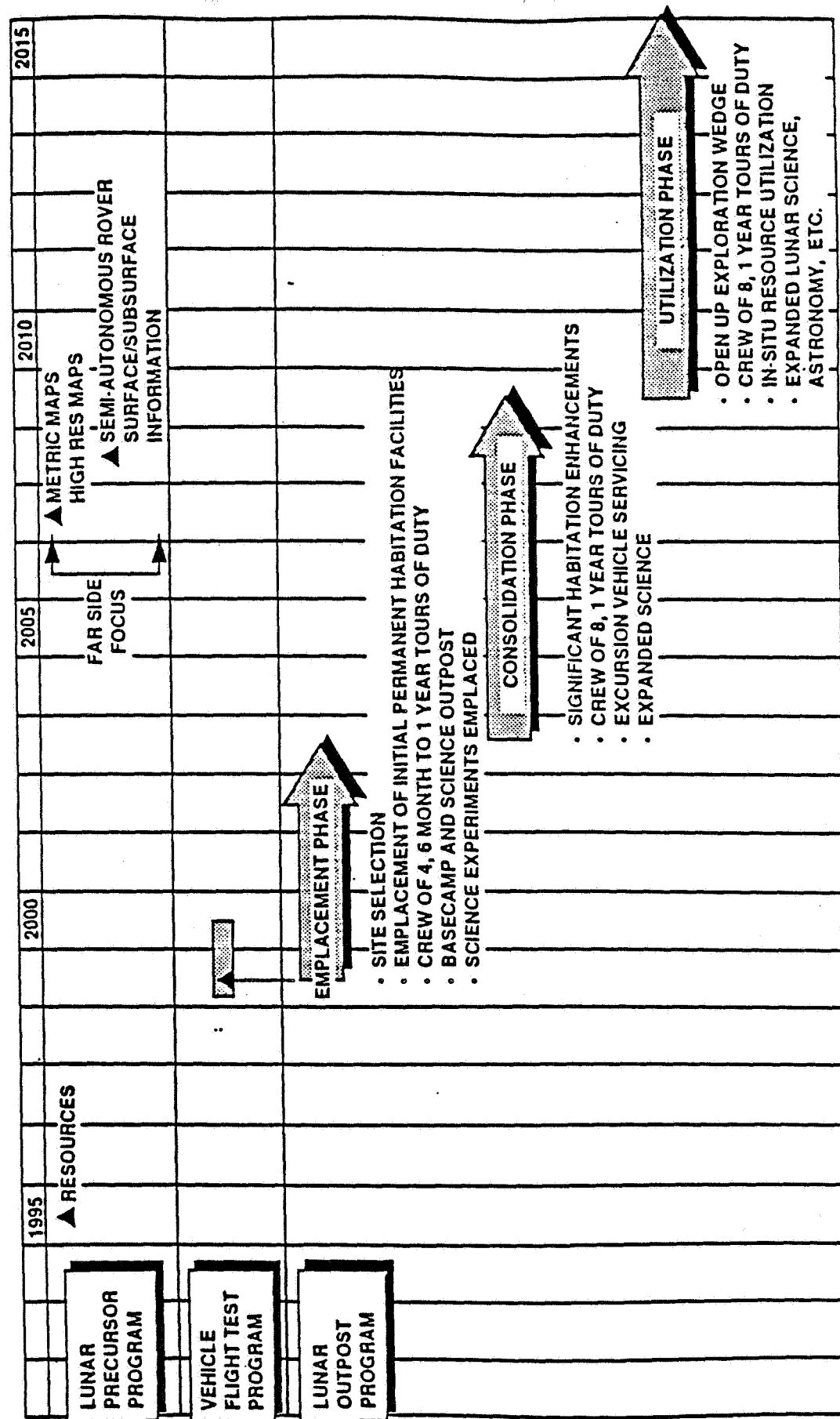
- EXPAND GEOLOGICAL EXPLORATION TO REGIONAL SCALE
- EXPAND OBSERVATORIES IN BREADTH AND SCALE
- CONDUCT UNIQUE EXPERIMENTS

• UTILIZATION PHASE

- EXPAND GEOLOGICAL EXPLORATION TO GLOBAL SCALE
- CONSTRUCT "GRAND" OBSERVATORIES
- CONDUCT COMPLEX EXPERIMENTS IN THE PHYSICAL SCIENCES

EXPLORATION MISSION DEVELOPMENT

LUNAR OUTPOST PHASES



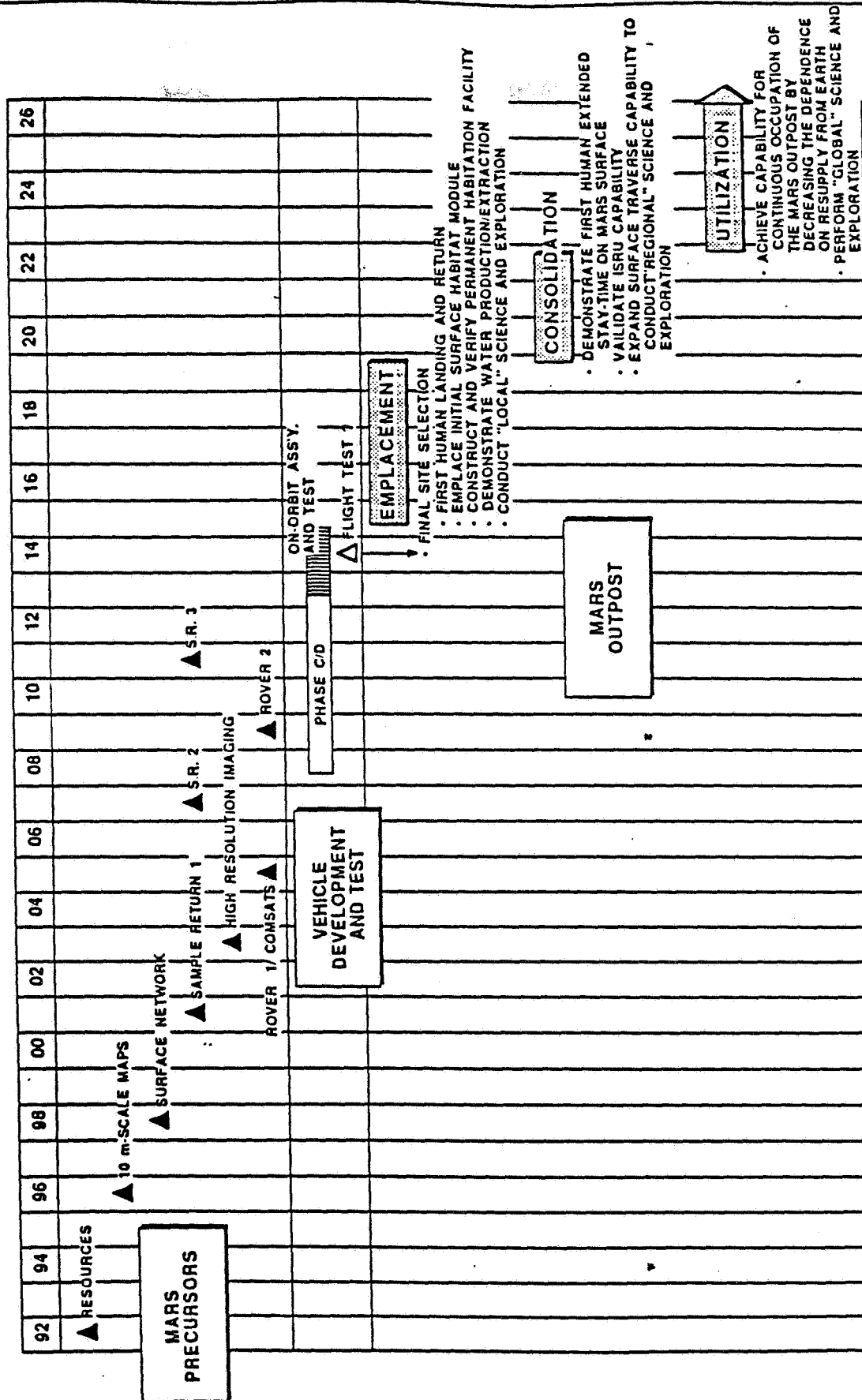
MARS EMPLACEMENT SCIENCE STRATEGY

1. SELECT A SITE CONSISTENT WITH SCIENCE OBJECTIVES OF STUDYING:
PLANETARY EVOLUTION AND LIFE AND
HUMAN HABITABILITY OF MARS
I.E. A SITE THAT PERMITS IMMEDIATE (EMPLACEMENT PHASE) AND
EXTENSIVE LOCAL SCIENCE EXPLORATION AND SAMPLING
FOR PAST LIFE, PALEOENVIRONMENTS, MINERALOGY/RESOURCES.
2. CONDUCT MANNED EXPLORATION AND SAMPLING NEAR MARS OUTPOST
 - GEOLOGY/GEOPHYSICS/METEOROLOGY
 - SEARCH FOR LIFE
 - SEARCH FOR WATER ENVIRONMENTS, PAST AND PRESENT
3. AT REMOTE SITES, CONDUCT TELEROBOTIC SAMPLE TRAVERSES AND DEPLOY A
GEOPHYSICAL/METEOROLOGY STATION NETWORK
4. CONDUCT OBSERVATIONS TO VALIDATE AND/OR CALIBRATE REMOTELY
SENSED PRECURSOR MEASUREMENTS
5. CONDUCT BASIC SAMPLE ANALYSES FOR CHARACTERIZATION BEFORE RETURN
TO EARTH

MISSION ANALYSIS ——— SYSTEM ENGINEERING & INTEGRATION ———

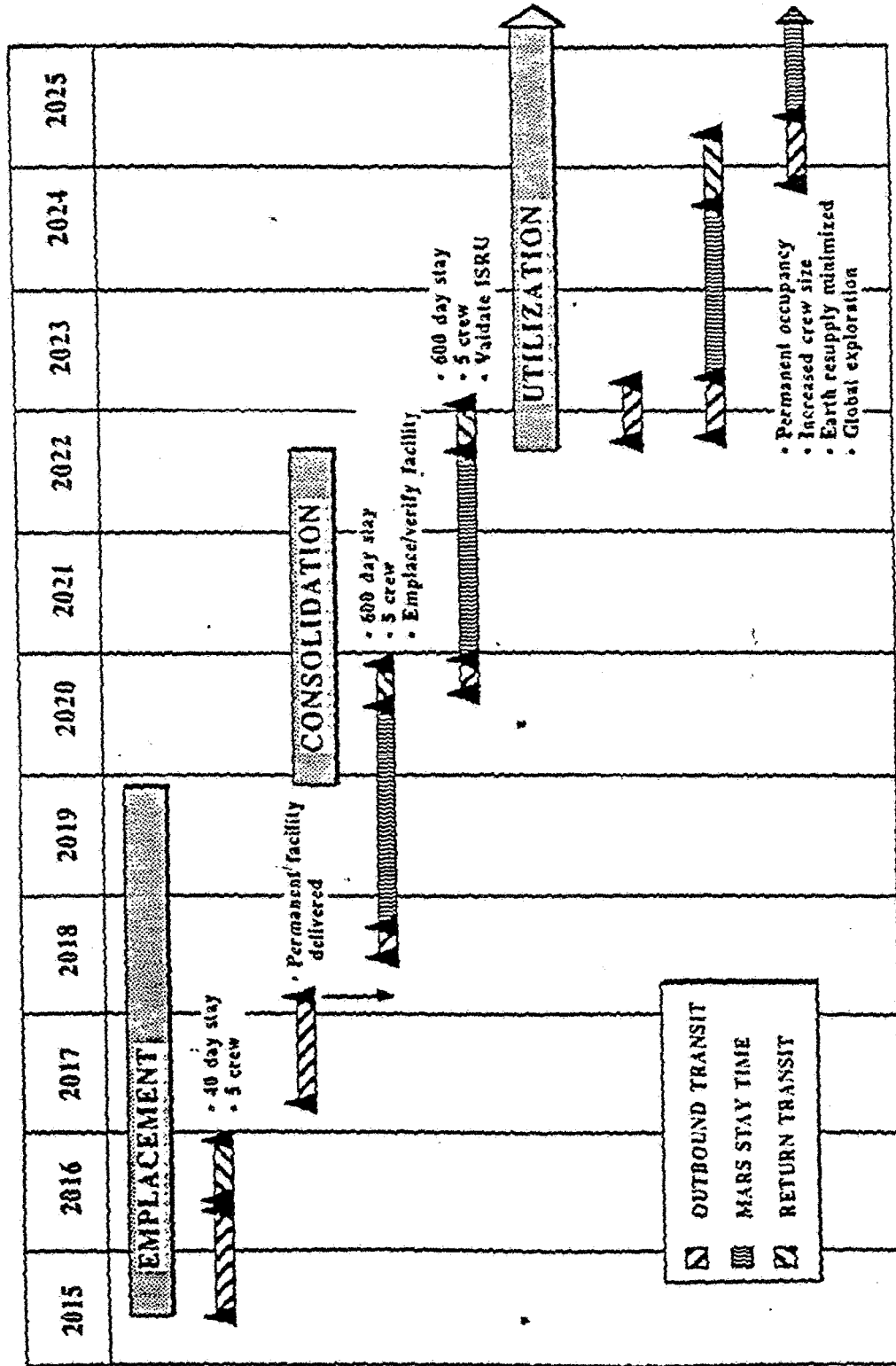
EXPLORATION MISSION DEVELOPMENT

MARS OUTPOST PHASES



KC EXPLORATION MISSION DEVELOPMENT

MARS OUTPOST --- HUMAN EXPLORATION TIMELINE



Implications for Support Systems

- ✓ Reliability and Simplicity Paramount
- ✓ Standardization to Minimize Parts/Systems
- ✓ Capacity and "Buffers" Sized for Problems
- ✓ Recovery/Workaround Capability and "Fail-Safe"
- ✓ Ability to Withstand Wide Environmental Variation
- ✓ Minimum Dependence on Earth-based Systems
- ✓ Maximized Crew Capability -- All Disciplines
- ✓ Minimum Waste/Maximum Recycle of All Resources

Special Concerns and Opportunities

- ✓ Emphasis Shifts From Propulsion to Habitation
- ✓ Self-Support Overrides Scientific Endeavors
- ✓ Time Dimension Becomes More Important
- ✓ Crew Relationships Are Vital Success Requirement
- ✓ Logistics Takes on New Importance
 - Packaging and Labelling Become Critical
 - Sizing of Units for Consumption Important
 - Storage/Location Techniques Drive Designs
 - Preservation Technology to Determine Reserves
 - Monitoring Systems for Resource Status Crucial
- ✓ Recycling/Information are the Keys to Success

Special Concerns and Opportunities (Continued)

- ✓ Maintaining Training and Ability to Respond Essential
- ✓ Long Trip Times Present Challenges for Morale
- ✓ Return to Earth Poses Unique Requirements
 - Physiologic Capabilities
 - Psychological Status and Performance
 - Latent "Threats" to Crew and Spacecraft
 - Latent "Threats" to Earth
 - Maximum Recovery of Data and Samples
- ✓ Measures of Success Subject to Reevaluation
- ✓ Final Outcome Dependent on Many Variables --
But the Most Visible, and Perhaps Most Important
is the Support System

**EQUIPMENT POOLING
NASA LEWIS RESEARCH CENTER
CLEVELAND, OHIO**

JAMES M. VRTIS

CHIEF

**EQUIPMENT MANAGEMENT BRANCH
LOGISTICS MANAGEMENT DIVISION**

INTRODUCTION

RESPONSIBLE FOR:

Maintenance

Operation

Modernization of LoRC Instrument Pool

POOL CONSISTS OF:

50,000 Pieces of Capitalized Equip. (value \$224M)

40,000 Pieces of Non-Capitalized Equip. (value \$39M)

90% ON LOAN AND IN USE

HISTORY

PRIOR TO APOLLO

Limited Instrumentation Available
Special Staff Built in House

POOL CONCEPT DEVELOPED IN '60s

Committee Formed
Instrument Families Determined
Specifications Written

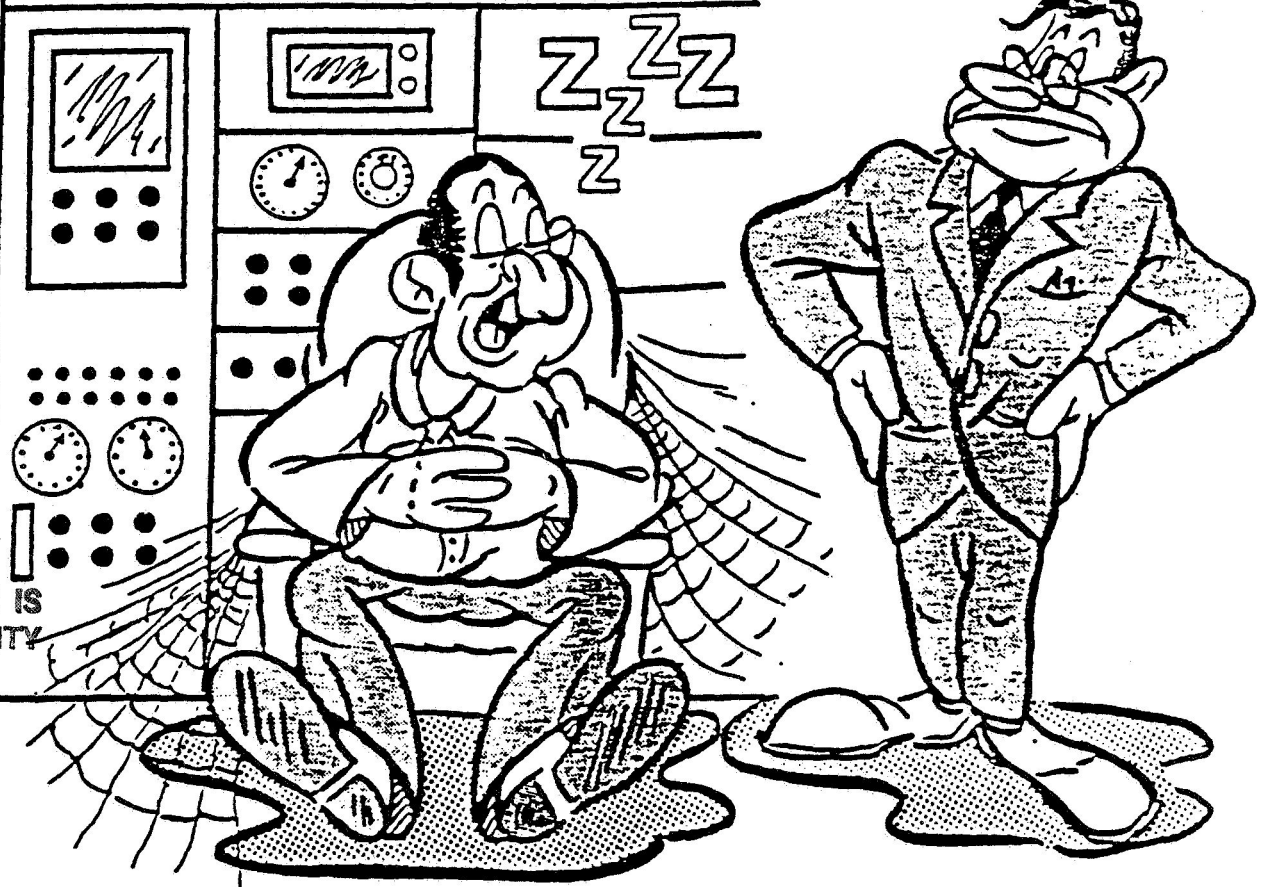
FUNDS PLENTIFUL

AFTER APOLLO

Funding and Manpower Cuts

LOW COST CORNER

THIS EQUIPMENT IS MINE, I NEED IT !



ORIGINAL PAGE IS
OF POOR QUALITY

*TAKE ANOTHER LOOK AT THE "ACTIVE"
EQUIPMENT YOU'RE HOLDING. SOMEONE
ELSE MAY REALLY NEED IT!*

FORECASTING

RESEARCHERS DETERMINE NEEDS

Quantities and Types of Instruments

INFORMATION NOTED & TALLIED

BUYS ARE MADE

Quantity Buys Save Money
Maintenance Less Complicated
Histories Easily Developed
Dogs Eliminated

FY 91 INSTRUMENT FORECAST

PLEASE FURNISH THE INFORMATION ON THE FOLLOWING PAGES FOR YOUR FORECAST NEEDS - SOME EXAMPLES:

U-SPEC	ITEM-RANGE/MODEL	AMOUNT	BLDG	ROOM	USER	TASK	AMOUNT	BLDG	ROOM	USER	TASK
	<u>PRESSURE TRANSDUCER</u>										
U-3	15 PSIA	1	5	CE 4	SMITH	X0A1234	3	5	CW 4	JONES	X0B3421
	25 PSIA										
	50 PSIA										
	100 PSIA										
	200 PSIA										
	300 PSIA										
	500 PSIA										
	1000 PSIA										
	2000 PSIA										

IF FOR MORE THAN ONE USER, USE DUPLICATE COPIES, OR IF YOU HAVE A QUESTION, PLEASE CALL ME AT PBX 3-3093.

Andrew B. McLachlan
TR, Instrument Pool

POOLING

SUCCESSFUL

Users Get What They Need

USERS KNOW WHAT THEY GET

Compliance To Purchased Specifications (Tested)

LOANS ARE INDEFINITE

Rental Costs Determine Length of Loan

GOALS:

**Modernize Where Possible
Keep Equipment Available for Emergencies
Replacement NOW if Possible**

POLICY

ESTABLISH GUIDELINES ON WHAT INSTRUMENTS TO POOL

Basic Instruments Rather than Mainframe or Multichannel

STANDARDIZE SPECIFICATIONS

Realistic Accuracies & Precision

UTILIZE RESOURCES ON HAND

Don't Throw it out Because it is Old

MEET NEEDS OF RESEARCH

FUNDING

EQUITABLE SYSTEM REQUIRED

CIRCULATE IDLE EQUIPMENT

Lesson Acquisition Costs

ELIMINATE SENSE OF OWNERSHIP

Rental Costs Determine Length of Loan

RENTAL SYSTEM: 2.8% / mo. 1st YEAR

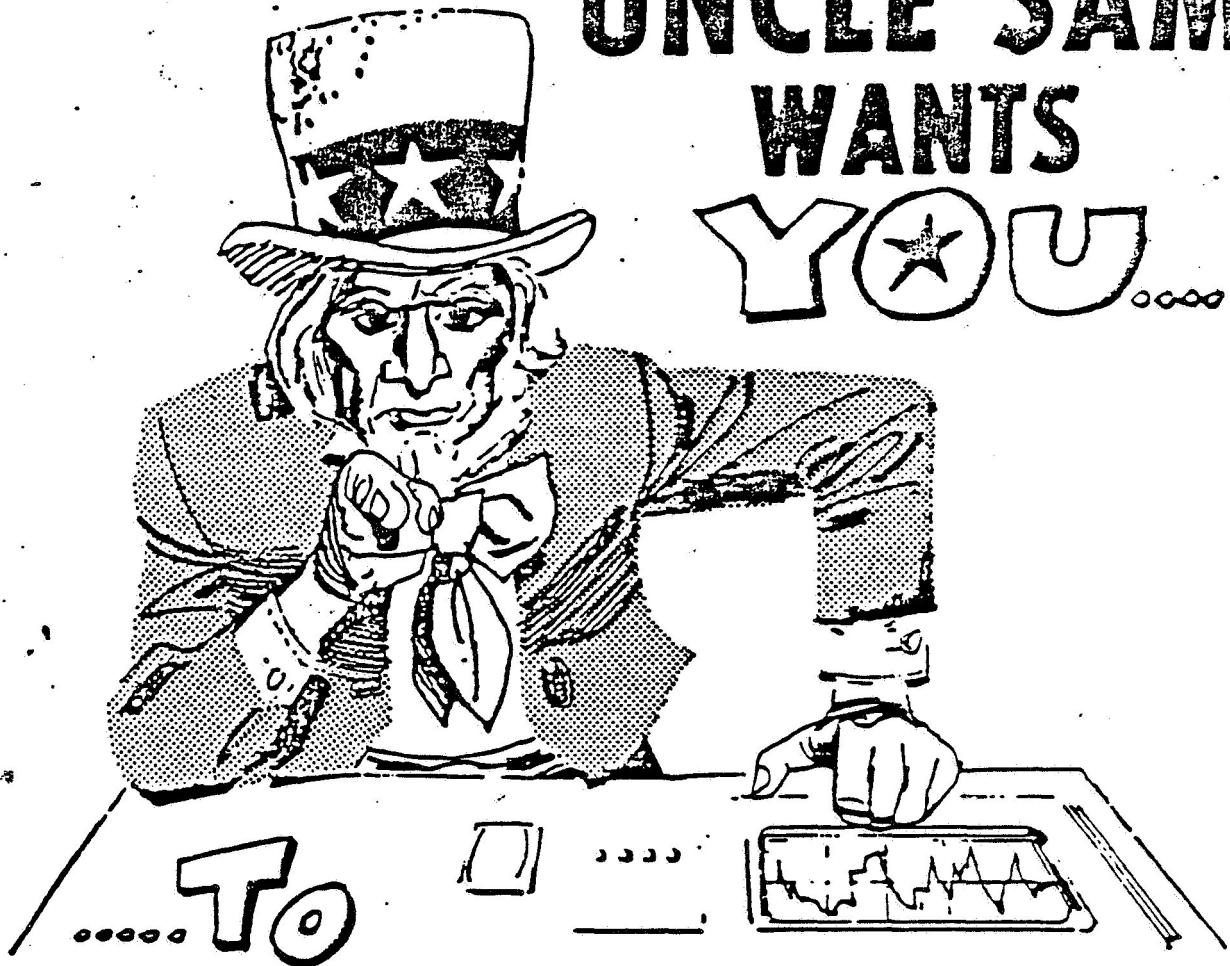
RESULTS: Acquisition Costs Reduced 50% First Year

Obsolete Idle Equipment Turned in For Excess

Funds Available for Modernization

Small Programs Assessed Only for Equipment Used

UNCLE SAM WANTS YOU...



★ Make do with equipment you have —
when you can.

★ Screen, use inactive equipment available at
your center and at other centers.

★ Make your inactive equipment available
to others.

SEE YOUR EQUIPMENT ACCOUNTABILITY SPECIALIST

433-3086

ORIGINAL PAGE IS
OF POOR QUALITY

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CLEVELAND, OHIO

JAMES M. VRTIS
EQUIPMENT AND MANAGEMENT BRANCH
LOGISTICS MANAGEMENT DIVISION

22ND ANNUAL NASA SUPPLY AND EQUIPMENT MANAGEMENT CONFERENCE
J. F. KENNEDY SPACE CENTER
COCOA BEACH, FLORIDA
DECEMBER 5-7, 1989

INTRODUCTION

GOOD MORNING. MY NAME IS JIM VRTIS, CHIEF OF THE EQUIPMENT MANAGEMENT BRANCH OF THE LOGISTICS MANAGEMENT DIVISION, AT NASA LEWIS RESEARCH CENTER. THE EQUIPMENT MANAGEMENT BRANCH IS RESPONSIBLE FOR MAINTENANCE, OPERATION, AND MODERNIZATION OF THE LEWIS INSTRUMENT POOL. THE ACTIVE POOL CONSISTS OF APPROXIMATELY 50,000 PIECES OF CAPITALIZED AND A LIKE NUMBER OF NON-CAPITALIZED EQUIPMENT. 90% OF THIS EQUIPMENT IS ELECTRONIC, ELECTRO-MECHANICAL, AND VIDEO EQUIPMENT WHICH IS ON LOAN AND IN USE AT RESEARCH FACILITIES THROUGHOUT THE CENTER. ABOUT 6,000 INSTRUMENTS OF ALL TYPES ARE IN THE POOL AT ANY GIVEN TIME AND ARE AVAILABLE FOR ISSUE AS REPLACEMENT FOR INOPERATIVE INSTRUMENTATION OR TO EQUIP A NEW TEST.

HISTORY

PRIOR TO APOLLO, MEASUREMENT OF UNUSUAL PARAMETERS WAS ACCOMPLISHED IN HOUSE BY THE DESIGN AND BUILDUP OF ANY INSTRUMENT NEEDED TO MAKE THE MEASUREMENT.

THE POOL CONCEPT WAS DEVELOPED IN THE EARLY SIXTIES WHEN INSTRUMENT MANUFACTURERS BEGAN DEVELOPMENT OF VARIETIES OF ELECTRONIC AND OTHER MEASUREMENT EQUIPMENT. A COMMITTEE WAS FORMED TO WRITE THE SPECIFICATIONS WHICH ARE REFERRED TO AS U-SPECS, FOR THOSE FAMILIES OF INSTRUMENTS REQUIRED TO SUPPORT THE CENTER'S RESEARCH PROGRAMS IN PROPULSION SYSTEMS. INITIALLY FUNDS WERE PLENTIFUL WITH COSTING PROVIDED EQUALLY BY THE RESEARCH DIVISIONS. THE INSTRUMENT OR EQUIPMENT POOL BEGAN. HOARDING

ALSO BEGAN BECAUSE EQUIPMENT WAS AVAILABLE AT NO ADDITIONAL COST AND THOUGHT TO BE PERSONAL PROPERTY WHICH CREATED INEFFICIENCIES.

FORECASTING

A METHOD WAS NECESSARY TO DETERMINE WHICH INSTRUMENTS WERE REQUIRED FOR PROGRAMS, AND WHETHER THEY FIT THE CRITERIA FOR POOLING BASED ON SPECIFICATIONS PREVIOUSLY WRITTEN. THE METHOD DEvised WAS "FORECASTING". FORECASTING IS AN ANNUAL EVENT THAT INVOLVES RESEARCHERS WHO ARE RUNNING THE EXPERIMENT OR TEST AND THE OPERATIONS PEOPLE WHO PROVIDE THE FACILITY WHERE THE TEST WILL TAKE PLACE. WORKING TOGETHER, THEY DETERMINE QUANTITIES AND TYPES OF INSTRUMENTS NEEDED FOR THE UPCOMING YEAR'S PROGRAMS. THIS INFORMATION IS NOTED ON A STANDARD FORM GENERATED BY THE EQUIPMENT MANAGEMENT BRANCH, WHICH LISTS BY TYPE AND RANGE ALL POOLED INSTRUMENTS IN THE METROLOGY FAMILIES. THERE ARE OVER 120 DIFFERENT INSTRUMENT TYPES WHICH INCLUDE PRESSURE, TEMPERATURE, VIBRATION, FLOW, STRESS, LOAD, MASS, TORQUE, AND ANYTHING ELSE THAT PROVIDES FOR MEASUREMENT OR STIMULUS.

RESPONSE FROM RESEARCHERS IS TALLIED AND TOTALLED, AND BASED ON QUANTITIES ALREADY IN THE POOL AND WHAT SPARES ARE REQUIRED, A QUANTITY BUY IS MADE. THERE ARE SEVERAL ADVANTAGES TO BUYING IN QUANTITY AND THEY ARE:

1. QUANTITY DISCOUNTS MAKE FOR DOLLAR SAVINGS.
2. TROUBLE SHOOTING AND REPAIR ARE LESS COMPLICATED.
3. HISTORIES ARE MORE EASILY DEVELOPED SO FUTURE BUYS CAN ELIMINATE THOSE INSTRUMENTS WHICH PROVE UNRELIABLE.

POOLING

THE POOL OPERATION AT LEWIS HAS BEEN SUCCESSFUL FOR SEVERAL REASONS, WITH THE BIGGEST BEING COOPERATION BETWEEN THE USER IN MAKING REQUIREMENTS KNOWN, AND EQUIPMENT MANAGEMENT WHO MAKE THE BUYS. ALL INSTRUMENTS PURCHASED THROUGH FORECAST ARE INSPECTED 100% FOR COMPLIANCE TO SPECIFICATIONS WRITTEN WITHIN THE PURCHASE AGREEMENT. IF AN INSTRUMENT IS REPAIRED AT ANY TIME DURING ITS LIFE, IT MUST BE CALIBRATED TO ASSURE THAT IT STILL MEETS THOSE SPECS. IN THIS WAY, THE USER HAS CONFIDENCE THAT THE EQUIPMENT HE DRAWS WILL PERFORM AS EXPECTED. POSSIBLE POOL CANDIDATES ARE PUT THROUGH AN EVALUATION TO DETERMINE MAINTAINABILITY, LIFE EXPECTANCY, MANUFACTURERS PAST PERFORMANCE FOR RELIABILITY AND OTHER FACTORS.

ALL LOANS ARE FOR AN INDEFINITE PERIOD, USUALLY FOR THE LENGTH OF THE PROGRAM OR UNTIL A MALFUNCTION OCCURS. THERE ARE NO FORMAL SHORT TERM LOANS. THE RENTAL COSTS DETERMINE THE LENGTH OF A POOL LOAN, ESPECIALLY IF THE INSTRUMENT WAS AN UNNEEDED LUXURY.

NOTEWORTHY; WHEN WE LOOK AT THE AVERAGE AGE OF INSTRUMENTATION AND SEE HIGH NUMBERS, DON'T BE MISLED. AT LEWIS, ABOUT 30% OF OUR MEASUREMENTS REQUIRE SIGNAL CONDITIONING, AMPLIFICATION, AND VOLTAGE SOURCES. INSTRUMENTS USED FOR THIS PURPOSE HAVE LONG LIFE SPANS AND SOME MAY BE PERFECTLY SUITABLE AFTER SEVERAL YEARS. A POOL CAN BE UPDATED AND MODERNIZED AS MUCH AS FUNDING WILL ALLOW, YET IT WILL LOOK ARCHAIC WHEN ONE READS A PRINTOUT OF AVERAGE INSTRUMENT AGE. IN THAT RESPECT, I'M SURE ALL CENTERS ARE SIMILAR.

WE TRY TO KEEP ENOUGH RECENTLY CALIBRATED INSTRUMENTS ON HAND TO ACCOUNT FOR ANY EMERGENCY. IF REPLACEMENT CANNOT BE IMMEDIATELY MADE, THE MALFUNCTIONED INSTRUMENT WILL BE REPAIRED ON PRIORITY DETERMINED BY IMPACT TO THE PROJECT. OUR GOAL IS TO RESPOND WITH REPLACEMENT RIGHT NOW. THIS MAY BE UTOPIAN, BUT WE HAVE BEEN FAIRLY SUCCESSFUL.

POLICY

THE PHASE DOWN AND FINAL END OF APOLLO BEGAN A TREND OF FUNDING CUTS WHICH RESULTED IN PERSONNEL REDUCTIONS AND A REALIGNMENT OF RESEARCH PROGRAMS. THE CENTER AGAIN BECAME SERVICE ORIENTED WITH REIMBURSABLE PROGRAMS BEING GENERATED. GUIDELINES WERE NECESSARY TO ESTABLISH WHICH EQUIPMENT TO CONSIDER POOLING. DECISIONS WERE MADE FOR EXAMPLE, ON WHETHER WE POOL LARGE MAINFRAME TYPE SCOPES OR MULTICHANNEL RECORDERS, OR POOL BASIC EQUIPMENT AND LET RESEARCH BUY THE COSTLIER EQUIPMENT FOR THEIR PROGRAM. EVERYONE WAS IN A BUDGET CRUNCH AND WE HAD TO BE COST EFFECTIVE AND STILL PROVIDE FOR MODERN EQUIPMENT. SPECIFICATIONS HAD TO BE STANDARDIZED WITH MORE REALISTIC ACCURACIES AND PRECISION. THE RESEARCHER WAS FORCED TO WEIGH EQUIPMENT COSTS VERSUS DELAYS IN BASIC RESEARCH PROGRAMS. EQUIPMENT MANAGEMENT HAD RESPONSIBILITY FOR MAINTENANCE OF A MODERN POOL, BUT WAS FORCED TO FOSTER UTILIZATION OF AVAILABLE RESOURCES WHICH WERE FAST BECOMING OBSOLETE. WE REVIEWED INVENTORY AND PROPOSED ACQUISITIONS TO DETERMINE BEST METHODS FOR MEETING NEEDS OF OUR RESEARCHERS THROUGH A MODERN POOL.

FUNDING

IN THE PAST, ALL RESEARCH DIVISIONS WERE ASSESSED EQUALLY FOR MAINTENANCE OF THE POOL AND THE EQUIPMENT IN IT. THE SMALL PROGRAMS COULD NOT AFFORD THE ACQUISITION OF MODERN EQUIPMENT OR SUPPORT OF A POOLING SYSTEM WITH TAXATION FOR MAINTENANCE AND CALIBRATION SERVICES. A MORE EQUITABLE FUNDING METHOD WAS NEEDED AND IDLE EQUIPMENT HAD TO BE CIRCULATED TO LESSEN ADDITIONAL PROCUREMENT. THE FEASIBILITY OF EQUIPMENT RENTAL WAS DISCUSSED WITH BUDGET, AND ADVANTAGES IDENTIFIED TO THE DIRECTORS OF RESEARCH ORGANIZATIONS. WE ESTABLISHED GUIDELINES TO DETERMINE WHICH EQUIPMENT TO CONSIDER POOLED AND WHAT PERCENTAGE OF ACQUISITION COST TO ASSESS FOR RENTAL PER MONTH.

FIRST YEAR RENTAL OF CAPITALIZED EQUIPMENT WAS 2.8% OF ACQUISITION COST PER MONTH. (THE AVERAGE HAS BEEN ABOUT 2.0%). MONIES ARE THEN USED TO BUY NEW EQUIPMENT AND INCLUDE REPAIR, CALIBRATION, AND ANY TRACEABILITY REQUIREMENTS THROUGH THE CALIBRATION LABORATORY. REPAIR AND CALIBRATION OF NON-POOLED INSTRUMENTS ARE CHARGED BACK FOR SERVICES ON A COST PLUS BASIS.

RESULTS

1. ACQUISITION COSTS OF POOLED EQUIPMENT AFTER THE FIRST RENTAL YEAR DROPPED OVER 50%.
2. OBSOLETE IDLE EQUIPMENT IS TURNED IN AND EXCESSED, FURTHER REDUCING PROPERTY MANAGEMENT COSTS.
3. RECIRCULATION OF EQUIPMENT IMPROVES THE HEALTH OF THE EQUIPMENT POOL.
4. FUNDS PROVIDE FOR CONTINUAL MODERNIZATION.
5. SMALL PROGRAMS ARE ASSESSED ONLY FOR EQUIPMENT USED.

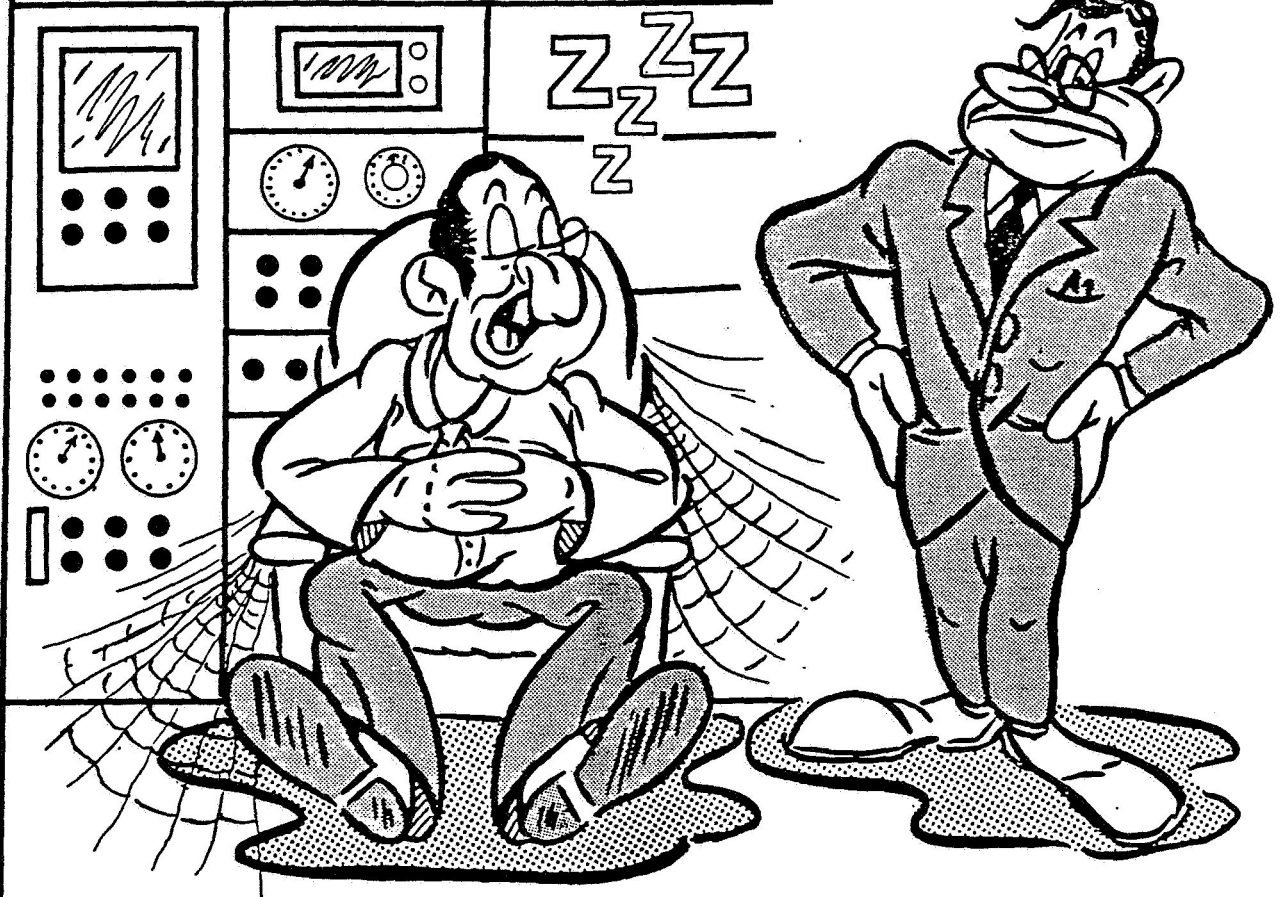
CONCLUSION

OUR POOLING PROGRAM AT LEWIS IS ONGOING WITH CHANGES CONSTANTLY BEING MADE TO IMPROVE. WE TRY TO LISTEN TO OUR USERS AND PROVIDE THE RESEARCH TOOLS THAT THEY NEED. WITH HELP FROM OUR USERS WE DETERMINE TYPES AND FAMILIES OF INSTRUMENTS TO POOL AND QUANTITIES BASED ON FORECAST. USERS QUICKLY REALIZE THAT EQUIPMENT IS NOT PERSONAL PROPERTY AND SAVINGS CAN BE REALIZED BY TURNING IN UNUSED EQUIPMENT. BENEFITS OF THIS SYSTEM HAVE BEEN PROVEN ESPECIALLY TRUE WHEN EQUIPMENT NEEDS ARE MET BY AVAILABLE, UP-TO-DATE HARDWARE, AT REASONABLE COST TO THE PROGRAM.

ARE THERE ANY QUESTIONS?

LOW COST CORNER

THIS EQUIPMENT IS MINE, I NEED IT !



*TAKE ANOTHER LOOK AT THE "ACTIVE"
EQUIPMENT YOU'RE HOLDING. SOMEONE
ELSE MAY REALLY NEED IT!*

FY 91 INSTRUMENT FORECAST

PLEASE FURNISH THE INFORMATION ON THE FOLLOWING PAGES FOR YOUR FORECAST NEEDS - SOME EXAMPLES:

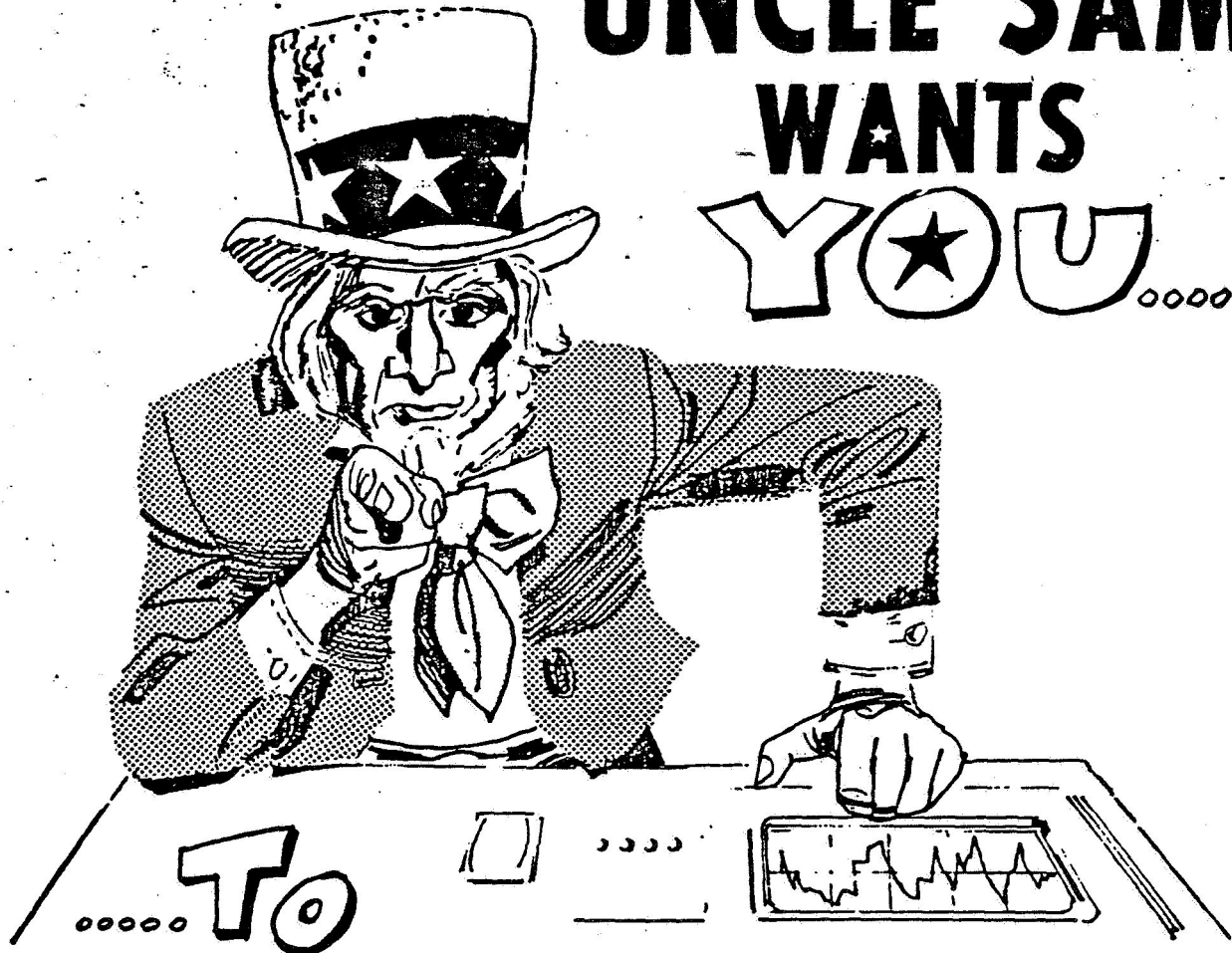
U-SPEC	ITEM-RANGE/MODEL	AMOUNT	BLDG	ROOM	USER	TASK	AMOUNT	BLDG	ROOM	USER	TASK
	<u>PRESSURE TRANSDUCER</u>										
U-3	15 PSIA	1	5	CE 4	SMITH	XOA1234	3	5	CW 4	JONES	XOB3421
	25 PSIA										
	50 PSIA										
	100 PSIA										
	200 PSIA										
	300 PSIA										
	500 PSIA										
	1000 PSIA										
	2000 PSIA										

IF FOR MORE THAN ONE USER, USE DUPLICATE COPIES, OR IF YOU HAVE A QUESTION, PLEASE CALL ME AT PBX 3-3093.

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Andrew B. McLachlan
TR, Instrument Pool

UNCLE SAM WANTS YOU...



- ★ Make do with equipment you have — when you can.
- ★ Screen, use inactive equipment available at your center and at other centers.
- ★ Make your inactive equipment available to others.

SEE YOUR EQUIPMENT ACCOUNTABILITY SPECIALIST

433-3086

ENVIRONMENTAL PANEL

MASTER

SUPPLY & LOGISTICS
MANAGEMENT CONFERENCE

HAZARDOUS MATERIALS / WASTE MANAGEMENT
SAFETY ISSUES

WAYNE FRAZIER
NASA SAFETY DIVISION
WASHINGTON D.C.

DEFINITION OF HAZ MAT

NHB 1700.1 VOL 1-A "BASIC SAFETY MANUAL", 1983 DEFINES

- A SUBSTANCE OR MATERIALS IN A QUANTITY AND FORM WHICH MAY POSE AN UNREASONABLE RISK TO HEALTH AND SAFETY OR PROPERTY WHEN TRANSPORTED IN COMMERCE (49 USC 1802). THE SECRETARY OF TRANSPORTATION HAS DEVELOPED A LIST OF MATERIALS THAT ARE HAZARDOUS WHICH MAY BE FOUND IN 49 CFR 172.101.

FROM NHB 1700.1 VOL 1-A "BASIC SAFETY MANUAL"

- TYPICAL EXAMPLES OF HAZ MAT ARE THOSE THAT MAY BE HIGHLY REACTIVE, POISONOUS, EXPLOSIVE, FLAMMABLE COMBUSTIBLE, CORROSIVE, RADIOACTIVE, PRODUCE CONTAMINATION OR POLLUTION OF THE ENVIRONMENT, OR CAUSE ADVERSE HEALTH EFFECTS OR UNSAFE CONDITIONS.

• BY REFERENCE SINCE NASA HAS ADOPTED THE OSHA STANDARDS,
THE NEW OSHA HAZARDOUS CHEMICAL DEFINITIONS IN 29 CFR
1910.1200 ALSO APPLY.

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"HAZARDOUS CHEMICAL IS DEFINED BY LAW AS ANY CHEMICAL WHICH
IS A PHYSICAL OR HEALTH HAZARD. PHYSICAL HAZARD MEANS A
CHEMICAL FOR WHICH THERE IS SCIENTIFICALLY VALID EVIDENCE
THAT IT IS A COMBUSTIBLE LIQUID, A COMPRESSED GAS,
EXPLOSIVE, FLAMMABLE, AN ORGANIC PEROXIDE, AN OXIDIZER,
PYROPHERIC, UNSTABLE (REACTIVE) OR WATER-REACTIVE. A
HEALTH HAZARD MEANS A CHEMICAL FOR WHICH THERE IS
STATISTICALLY SIGNIFICANT EVIDENCE BASED ON AT LEAST ONE
STUDY CONDUCTED IN ACCORDANCE WITH ESTABLISHED SCIENTIFIC
PRINCIPLES THAT ACUTE OR CHRONIC HEALTH EFFECTS MAY OCCUR
IN EXPOSED EMPLOYEES. MORE DETAILED INFORMATION CAN BE
FOUND IN 29 CFR 1910.1200 (C)."

SAFETY REQUIREMENTS APPLICABLE TO THE SUPPLY & LOGISTICS FUNCTION

1. BASIC TRAINING FOR EACH EMPLOYEE FOR SPECIFIC
JOB-RELATED SAFETY AND HEALTH INFORMATION
 - A. HAZARDS OF THE JOB
 - B. SAFE WORK PRACTICES
 - C. HAZARDS OF THE WORK ENVIRONMENT
 - D. USE AND CARE OF PERSONNEL PROTECTIVE EQUIPMENT
 - E. FIRST AID PROCEDURES
 - F. REPORTING OF INJURIES, ILLNESSES, AND HAZARDOUS
CONDITIONS

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2.

SPECIFIC TRAINING

BASIC SAFETY MANUAL CHAPTER 6: DISTINCTION BETWEEN USERS OF HAZARDOUS MATERIALS AND HANDLERS OF HAZARDOUS MATERIALS.

HANDLERS: "THOSE INDIVIDUALS WHO DO NOT OPEN OR OTHERWISE DISTURB THE INTEGRITY OF THE BASIC, PROPERLY PACKAGED, SHIPPING CONTAINER THAT HOLDS THE HAZ MAT. AS AN EXAMPLE, THIS INCLUDES PERSONNEL WHO PREPARE, PACKAGE, MARK, OR TRANSPORT HAZ MAT. PERSONNEL WHO REDUCE PALLETIZED OR OTHERWISE COMBINED ITEMS INTO SMALLER INCREMENTS WITHOUT EXPOSING THE HAZ MAT ARE CONSIDERED HANDLERS."

CERTIFICATION REQUIREMENTS FOR HANDLERS OF HAZ MAT

- LINE MANAGEMENT OR FIELD INSTALLATION SAFETY OR HEALTH OFFICIALS WILL DETERMINE IF SPECIAL SAFETY CERTIFICATION IS REQUIRED FOR A PARTICULAR JOB.
- SPECIFIC TRAINING IN THE FEDERAL, NASA, AND LOCAL RULES FOR PREPARING, PACKAGING, MARKING, AND TRANSPORTING THE HAZARDOUS MATERIAL ASSOCIATED WITH THE JOB.
- EXAMINATION BY WRITTEN TEST TO DETERMINE THE ADEQUACY AND RETENTION OF THE TRAINING.
- ISSUANCE OF A CARD OR LICENSE (TO BE CARRIED ON PERSON) LISTING NAME, DATE, MATERIALS FOR WHICH CERTIFICATION IS VALID, SIGNATURE OF CERTIFYING OFFICIAL, AND DATE OF EXPIRATION.
- CATEGORY III RECERTIFICATION PERIOD WILL BE AS DETERMINED BY THE INSTALLATION SAFETY AND/OR HEALTH OFFICIALS IN THE ABSENCE OF ANY STATE OR FEDERAL REQUIREMENTS.

3. MANAGEMENT FUNCTIONS

A. HANDLING AND STORAGE OF MATERIALS

- (1) EACH INSTALLATION WILL, AS APPROPRIATE, HAVE ADEQUATE SAFETY PROCEDURES GOVERNING HANDLING AND STORAGE OF MATERIALS WITH PARTICULAR EMPHASIS ON HAZARDOUS MATERIALS (E.G., PROPELLANTS; CRYOGENICS; GASOLINE; HIGH PRESSURE FLUIDS; FLAMMABLE MATERIALS; POISONOUS, TOXIC AND RADIOACTIVE MATERIALS; CORROSIVES; EXPLOSIVES; ACIDS; AND SIMILAR MATERIALS).
- (2) PARTICULAR ATTENTION IS TO BE GIVEN TO PROPER SPACING, ADEQUATE IDENTIFICATION, COLOR CODING, ENVIRONMENTAL CONTROLS, STANDARD CONTAINERS AND QUALIFICATIONS AND TRAINING OF WAREHOUSING PERSONNEL.

B. FACILITY OPERATIONS MANAGERS OR COORDINATORS

- (1) THE FIELD INSTALLATION DIRECTOR OR DESIGNEE CAN APPOINT A FACILITY OPERATIONS MANAGER OR FACILITY COORDINATOR THAT HAS RESPONSIBILITY FOR OVERSEEING PROPER OPERATION OF THE FACILITY. THE DEGREE OF HAZARDS INVOLVED AND THE SCOPE OF OPERATIONS IN THE FACILITY WILL BE USED TO DETERMINE THE NEED FOR A FACILITY OPERATIONS MANAGER OR COORDINATOR. A FACILITY SAFETY COORDINATOR MAY BE APPOINTED TO ASSIST THE MANAGER.
- (2) THE FACILITY OPERATIONS MANAGER OR COORDINATOR IS THE FOCAL POINT FOR SAFETY PLANNING, IMPLEMENTATION AND ENFORCEMENT. CONSIDERATION WILL BE GIVEN TO THE ELIMINATION OF HAZARDS, SAFETY ANALYSIS, PROTECTIVE EQUIPMENT AND DEVICES, AND THE PRESENCE OF EMERGENCY EQUIPMENT INCLUDING FIRST AID GEAR, EMERGENCY SHOWERS, AND LIKE ITEMS. EMERGENCY PLANS ARE TO BE IN EFFECT AND SUFFICIENTLY PRACTICED TO ASSURE ADEQUACY. PROCEDURAL ASPECTS ARE TO INCLUDE ISSUANCES OF PERMITS, CONDUCT OF INSPECTIONS, AND TRAINING OF PEOPLE.

C. FIELD INSTALLATION DIRECTORS SHALL:

ENSURE THAT HAZARDOUS MATERIAL WILL BE LABELED IN ACCORDANCE WITH CURRENT LAWS OR REGULATIONS TO ALERT USERS, SHIPPERS, OCCUPATIONAL SAFETY AND HEALTH AND EMERGENCY ACTION PERSONNEL, AND OTHERS, TO BASIC INFORMATION CONCERNING FLAMMABILITY, TOXICITY, COMPATIBILITY, FIRST AID PROCEDURES, AND NORMAL AS WELL AS EMERGENCY HANDLING AND DISPOSAL PROCEDURES.

SUMMARY

1700.1 VOL 1-A IN CONJUNCTION WITH NHS/IH 1845.3
"NASA HEALTH STANDARD FOR HAZARD COMMUNICATION"
MEETS ALL EXISTING LAWS.

NEW CHANGES

- DOT PROPOSED RULEMAKING FOR INCREASED TRAINING & DOCUMENTATION FOR CLASSIFIERS, PACKAGERS, PREPARERS, OPERATORS, AND "PERSONS IN THE VICINITY OF HAZARDOUS MATERIALS DURING THE COURSE OF TRANSPORTATION E.G. WAREHOUSE WORKERS, DRIVERS."
- NASA INTERACTIVE HAZARD COMMUNICATION PROGRAM. COPIES PROVIDED BY CODE N TO EACH CENTER TRAINING OFFICE.

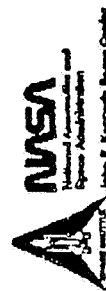
WHAT IS NEEDED?

- MORE OF A "STORE STOCK" CENTRAL DISTRIBUTION SYSTEM FOR HAZARDOUS CHEMICALS TO LIMIT THE REGULATORY BURDEN OF REPORTING AND DOCUMENTATION.
- BETTER CONTROL.

APPLICABLE REGULATIONS

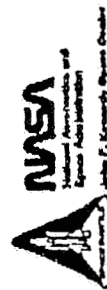
10/10/89

- Code of Federal Regulations, 29 CFR 1910.1200,
"OSHA Hazard Communication Standard"
- NASA Health Standard, NHS/IH-1845.3,
"NASA Health Standard on Hazard Communication"



MANUFACTURER RESPONSIBILITIES

- Determine the hazards associated with products
- Communicate the hazards to downstream users via:
 - Container labeling
 - Material Safety Data Sheets



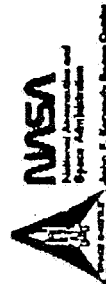
EMPLOYER RESPONSIBILITIES

- Maintain a list of all workplace hazardous materials
- Maintain manufacturers Material Safety Data Sheets (MSDSs)
- Provide employees 'ready access' to hazardous material lists and MSDSs
- Assure proper labeling of all containers of hazardous materials
- Provide Hazard Communication training to all potentially exposed employees



EMPLOYEE RIGHTS

- Employees have right to know the hazards in his/her workplace
- Employee has right to know how to identify the hazards and methods of protection from them
- Employee has right to refuse work when hazard information is not provided (applicable to certain state regulations only)



COMMODITIES WHICH MAY CONTAIN HAZARDOUS MATERIALS

Abrasives	Electroplating Chemicals	Photographic Chemicals
Acids	Emulsifying Agents	Petroleum Products
Adhesives	Explosives	Pigments
Antifoaming Agents	Fertilizers	Pitches
Antifreeze Agents	Fire Extinguishing Chemicals	Plasters
Anti-Oxidants	Fire Retardants	Plasticizers
Asphalts	Foaming Agents	Plastic Resins
Batteries	Fuels	Polishes
Bleaches	Fumigants	Preservative Chemicals
Catalysts	Fungicides	Protective Coatings
Caustics	Laboratory Reagents	Refrigerants
Chelating Agents	Lubricants	Rust Removers
Cleaning Agents	Metal Powders	Sanitizing Agents
Compressed Gases	Metal Salts	Scrap Metal
Concrete Mixes	Metal Stock	Sealants
Corrosion Inhibitors	Oils	Solders
Cryogenic Liquids	Oxidizers	Solder Fluxes
Curing Agents	Paints	Solvents
Degreasing Agents	Paint Removers	Sterilizing Agents
Desiccants	Pesticides	Tars
Dyes	Photocopy Chemicals	Thermal Insulation Materials



DEFINING HAZARDOUS MATERIALS

Hazards associated with materials are classified as physical hazards or health hazards. These materials can cause injury or illness as a result of either their chemical characteristics or their toxicity.

PHYSICAL HAZARDS, such as fire or explosions, occur as a result of chemical reactions or change in physical state.

HEALTH HAZARDS, such as poisoning, allergic response, or disease, occur from the inhalation, ingestion, or absorption of the material through the skin or eyes.



ACQUISITION OF HAZARDOUS MATERIALS

- Identify Procurements involving Hazardous Materials
 - Federal Std. 313C, 'Material Safety Data for Hazardous Materials Furnished to Government Activities'
 - Use generic identifier
- Invoke procurement specifications
 - Hazardous Material and Material Safety Data Clause, NASA FAR Supplement, Part 52.223.3,
 - Line item requiring labeling in accordance with 29CFR 1910.1200 (f)(1)
 - Provisions for Trade Secret information in accordance with 29CFR 1910.1200 (i)(3)



RECEIPT OF HAZARDOUS MATERIALS

- OSHA Regulations come into effect on receipt of the material
- Receiving Inspection
 - Verify container labeling meets 29CFR 1910.1200 (f)(1)
 - Verify MSDS is received with shipment or already available
- Update Hazardous Material List
- Update Material Safety Data Sheet file



STORAGE OF HAZARDOUS MATERIALS

- Maintain inventory record of Hazardous Materials to point of issuance to user
- Maintain 'ready access' to MSDSs for each Hazardous Material
- Ensure that container labels are preserved throughout the storage cycle of the Hazardous Material
- Unless otherwise directed by Safety or Fire organizations, store in accordance with special precautions identified on Manufacturers container label.



ISSUEANCE OF HAZARDOUS MATERIALS

- Do not distribute Hazardous Materials when:
 - Containers are improperly labeled
 - Material Safety Data Sheets are not available for the item
- When Hazardous Materials are recontainerized prior to distribution, relabel containers in accordance with 29CFR 1910.1200 (f)(1)



CONTAINER LABELING

- Container labeling/relabeling is required prior to distribution when:
 - Container label becomes damaged or otherwise illegible during storage cycle.
 - Hazardous Material is recontainerized or repackaged



EXCESS PROPERTY

- Excess Property disposition requires:
 - Containers must be labeled in accordance with 29CFR 1910.1200 (f)(1)
 - Material Safety Data Sheet must be provided with each Hazardous Material sold
- The OSHA Hazard Communication Standard does not apply to Hazardous Wastes



HAZARDOUS MATERIALS / WASTE
MANAGEMENT

ENVIRONMENTAL REGULATIONS
OVERVIEW

Michael Green
Facilities Operations
and Maintenance Division

HAZARDOUS MATERIALS

- FEEDSTOCKS, CLEAN SOLVENTS, LAB REAGENTS
- STORAGE REGULATED BY OSHA
- CERTAIN ENVIRONMENTAL REQUIREMENTS MAY EXIST
 - STATE ENVIRONMENTAL REGULATIONS
 - SPILL CONCERNS - SECONDARY CONTAINMENT, FLOOR DRAINS
 - COMMUNITY RIGHT-TO-KNOW

HAZARDOUS WASTE

- DISCARDED MATERIAL, DETERMINED TO BE HAZARDOUS
 - CHARACTERISTIC OR LISTED
 - SOLID, LIQUID OR CONTAINED GAS
- SOURCES
 - BY-PRODUCT OF PROCESS
 - SPENT CLEANING SOLVENT
 - LAB WASTE
 - OUTDATED HAZARDOUS MATERIALS
 - SPILLS

HAZARDOUS WASTE (CONTINUED)

- **GENERALLY HANDLED BY ENVIRONMENTAL STAFF, BUT YOU MAY:**
 - **BE A GENERATOR**
 - **HAVE SATELLITE ACCUMULATION POINT**
 - **MANAGE WASTE STORAGE FACILITY**
 - **HAVE A SPILL**
- **PERSONNEL NEED TO BE AWARE OF POTENTIAL PROBLEMS**
 - **TRAINING**
 - **RESPONSIBLE MANAGEMENT**

WASTE MINIMIZATION

- REGULATORY REQUIREMENT
- ECONOMICAL
- SOURCE REDUCTION
 - PRODUCT CHANGES
 - INPUT MATERIALS
 - PROCESS, MATERIAL, AND OPERATING CHANGES
 - MANAGEMENT PRACTICES
 - WASTE SEGREGATION
- RECYCLING/RECLAIMING

RECYCLED/RECLAIMED MATERIALS

- EXEMPTED FROM FEDERAL HAZARDOUS WASTE REGULATIONS
- ON-SITE - EX.: SOLVENT RECOVERY
- OFF-SITE - EX.: BATTERIES, SOLVENTS
- POSSIBLE PROBLEMS
 - REGULATIONS UNCLEAR
 - STATE REGULATIONS
 - IMPROPER HANDLING BY RECYCLERS
 - SCAM RECYCLING
- TRAINING

USED OIL

- NOT CURRENTLY REGULATED BY EPA
 - COULD BE IN THE NEAR FUTURE
- REGULATED BY SOME STATES - CALIFORNIA
- GENERALLY SENT OFF-SITE FOR RECYCLING AS REVENUE SOURCE
- POSSIBLE PROBLEMS
 - FUTURE REGULATIONS LIKELY
 - IMPROPER HANDLING BY RECYCLERS
 - PRICE HAS DROPPED
 - CONTAMINATION - CHLORINATED SOLVENTS, DRUM RESIDUES
 - CARELESS STORAGE/STOCKPILING

OFF-SITE DISPOSAL, INCLUDING RECYCLERS

- CAREFUL SCREENING
- ENVIRONMENTAL AUDITS
- MINIMIZE FUTURE LIABILITY
- COST SHOULD NOT BE ONLY SELECTION CRITERIA

COMMUNITY RIGHT-TO-KNOW

- IN ADDITION TO WORKER RIGHT-TO-KNOW
- NASA VOLUNTARILY COMPLYING WITH NOTIFICATION REQUIREMENTS
- DOCUMENTATION HANDLED BY ENVIRONMENTAL STAFF
- SOME REQUIREMENTS DO NOT APPLY TO ALL CENTERS
- WAREHOUSE PERSONNEL NEED TO TRACK QUANTITIES AND LOCATION OF MATERIALS BEING STORED

SPILLS

- MOST SERIOUS SITUATION LIKELY TO OCCUR
- PROPER STORAGE AND HANDLING WILL MINIMIZE SPILLS AND RESULTANT DANGER
- DO NOT ATTEMPT TO HANDLE IF NOT PREPARED
- REPORT TO FIRE DEPARTMENT AND/OR ENVIRONMENTAL STAFF IMMEDIATELY
- QUICK RESPONSE MINIMIZES ENVIRONMENTAL DAMAGES

SUMMARY

- HANDLING AND DISPOSAL OF WASTE IS EXPENSIVE AND TIME CONSUMING
- SUPPLY PERSONNEL HAVE LEGITIMATE CONCERNS DUE TO QUANTITIES OF HAZARDOUS MATERIALS HANDLED
- MOST SUPPLY OFFICES ARE INVOLVED WITH WASTE TO SOME DEGREE
- NEED TO WORK CLOSELY WITH ENVIRONMENTAL STAFF
- PROMOTE WASTE MINIMIZATION - EX.: CONTROL QUANTITIES IN STORAGE
- ENSURE TRAINING
- SCREEN RECYCLERS AND OFF-SITE DISPOSAL CONTRACTORS

Alan Farmer
RCRA
Region 4
Atlanta, GA

DEFINITION OF HAZARDOUS SUBSTANCE:

- 1) Any material that poses a threat to human health and/or the environment. Typical hazardous substances are toxic, corrosive, ignitable, explosive, or chemically reactive.
- 2) Any substance designated by EPA under CERCLA to be reported if a designated quantity of the substance is spilled in the waters of the United States or if otherwise emitted to the environment.

DEFINITION OF HAZARDOUS MATERIAL:

A substance or material, including a hazardous substance, which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and which has been so designated.

DEFINITION OF HAZARDOUS WASTE:

As defined in RCRA, the term "hazardous waste" means a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical or infectious characteristic may -

- A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or
- B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

HAZARDOUS WASTE (CONT.):

As defined in the regulations, a solid waste is hazardous if it meets one of four conditions:

- 1) Exhibits a characteristic of a hazardous waste -
ignitability, corrosivity, reactivity, or toxicity (40 CFR
Section 261.20 through 261.24)
 - 2) Has been listed as hazardous (40 CFR Section 261.31 through
261.33)
 - 3) Is a mixture containing a listed hazardous waste and a
nonhazardous solid waste (unless the mixture is specifically
excluded or no longer exhibits any of the characteristics of
hazardous wastes)
- Is not excluded from regulations as a hazardous waste

A generator may accumulate hazardous waste on-site for 90 days or less as long as the following requirements are met:

- o Proper Storage -- The waste is properly stored in containers or tanks marked with the words "Hazardous Waste" and the date on which accumulation began.
- o Emergency Plan -- A contingency plan and emergency procedures to use in an emergency must be developed.
- o Personnel Training -- Facility personnel must be trained in the proper handling of hazardous waste.

If the generator accumulates hazardous waste on-site for more than 90 days he is considered an operator of a storage facility and must comply with the Subtitle C requirements for such facilities.

(c)(1) A generator may accumulate as much as 55 gallons of hazardous waste or one quart of acute hazardous waste listed in section 261.33(e) in containers at or near any point of generation where wastes initially accumulate, which is under the control of the operator of the process generating the waste, without a permit or interim status and without complying with paragraph (a) of this section provided he:

(i) Complies with section 265.171, 265.172, and 265.173(a) of this chapter, and

(ii) Marks his containers either with the words "Hazardous Waste" or with other words that identify the contents of the containers.

(2) A generator who accumulates either hazardous or acutely hazardous waste listed in section 261.33(e) in excess of the amounts listed in paragraph (c)(1) of this section at or near any point of generation must, with respect to that amount of excess waste, comply within three days with paragraph (a) of this section or other applicable provisions of this chapter. During the three day period the generator must continue to comply with paragraphs (c)(1)(i) through (ii) of this section. The generator must mark the container holding the excess accumulation of hazardous waste with the date the excess amount began accumulating.

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**CONTRACT TRANSITION
PANEL**

CONTRACT PHASE-IN

- ◆ **TRANSITION PLANNING / SCHEDULING**
- ◆ **GOVERNMENT / CONTRACTOR COMMUNICATION**
- ◆ **CONTRACTOR / CONTRACTOR INTERFACE**
- ◆ **SPECIAL CONCERNS WITH CONSOLIDATED CONTRACTS**
- ◆ **LABOR RELATIONS**

WORKFORCE TRANSITION

- ◆ **UNION vs NON-UNION**
- ◆ **EMPLOYEE BRIEFINGS AND ORIENTATION**
- ◆ **SERVICE CONTRACT ISSUES**
 - Wages**
 - Benefits**
- ◆ **WORKFORCE CONTINUITY**
 - Marginal Supervisors**
 - Marginal Employees**
 - Key Employees to Retain**

JOINT APPROACH TO CONTRACT PHASE-IN AND PERFORMANCE

- ◆ **AGREE ON PLANS TO REMEDY PROBLEM AREAS**
- ◆ **MONITOR PROGRESS**
- ◆ **DISCUSS PROGRESS OFTEN**
 Don't wait for six month evaluation
- ◆ **GOVERNMENT AND CONTRACTOR MUST ACT AS
A TEAM. MUST NOT OPERATE IN A VACUUM.**
- ◆ **IMMEDIATE PERFORMANCE FEEDBACK**

LESSONS LEARNED

- ◆ **UP FRONT NEGOTIATIONS**
- ◆ **FIX PROBLEM AREAS IMMEDIATELY**
- ◆ **ON-GOING GOVT. / CONTRACTOR COMMUNICATION**

SUPPLY AND EQUIPMENT CONFERENCE CONTRACTOR PANEL
SUPPORT SERVICE CONTRACTORS (SSC) TRANSITIONS

- 0 PHYSICAL INVENTORY (WALL-TO-WALL) DURING
PHASE-IN
- 0 TRANSFER OF INFORMATION WRITTEN AND
ELECTRONIC RECORDS AND FILES
- 0 AN AWARENESS OF THE OVERALL CONTRACT
COST IMPACT AGREEMENTS BETWEEN SSC AND
EMPLOYEES UNION

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**NASA AMES, MOFFETT FIELD
CENTER TRANSITION
CONTRACT PROPERTY CUSTODIAN**

1. Preliminary Considerations:

- A. How will center be divided (i.e. by location, organization code or other method) ?
- B. What existing reports can the contractor use to facilitate the transition ?
- D. What computer generated reports can be developed to assist in transition inventory ?
- E. How will the contractor gain responsibility for equipment (i.e. transition inventory) ?
- F. What special deviations should the center consider submitting to headquarters to ease the enormity of the task?
- G. How will account numbers change during the transition in order to separate records that have been verified and transferred to the new contract custodians from records that require further resolution from the current custodians prior to the transfer of responsibility.
- H. How will current custodians be notified of status of account and action required to resolve discrepancies ?
- I. What new innovations can be developed and implemented to further enhance the directives in the 4200 manual and improve our methods of controlling equipment.
- J. Who will conduct triennial, 20% and 100% sensitive items inventories ?
- K. How will custodian change inventories be handled ?
- L. How can center management support transition and emphasize the importance of equipment control ?
- M. Who will develop and approve standard operating procedures.

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2. Internal Tracking Procedures:

- A. Reporting equipment missing from assigned locations during the transition inventory.**
 - 1. How will missing items be recorded?
 - 2. How will missing items be reported?
 - 3. Who will resolve discrepancies?
 - 4. What time limitation will be invoked?
 - 5. What follow-up measures will be required?
- B. Reporting misplaced equipment found in locations other than the computer reflected locations.**
 - 1. How will misplaced equipment be recorded?
 - 2. How will misplaced equipment be labeled?
 - 3. How will misplaced equipment be matched to clear missing items?
 - 4. How will misplaced equipment be reported?
 - 5. How will misplaced equipment be resolved?
- C. Notify calibrations of common equipment changes.**
 - 1. How to remove record ID 'B' from NEMS.
 - 2. Whether or not to report missing ID 'C' equipment.
 - 3. How to involve calibrations in decontrolling items.
- D. Found on Station procedure.**
 - 1. How to report F.O.S. equipment.
 - 2. How to ensure item is F.O.S. and not a retag.
 - 3. Report submission deviation.
 - 4. How to record as part of transition inventory.
- E. Records Check procedure.**
 - 1. How to check an item with a tag that does not appear on inventory printout.
 - 2. What steps should be taken to enter item into NEMS.
 - 3. What information is required.
- F. Return from previous survey procedure.**
 - 1. Who assumes responsibility?
 - 2. How to determine account designation.
 - 3. How to record as part of transition inventory.

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3. Lessons Learned:

- A. Account designation.
- B. Inventory team set-up.
- C. Handling input and labeling of misplaced equipment.
- D. Follow-up for discrepancies.
- E. Missing equipment theory.

4. Innovations:

- A. Color coded Zone Labels.
- B. Modified master input forms.
- C. Internal routing slip for user equipment status reporting.
- D. Alignment of Equipment Management Specialist and Inventory Clerks.
- E. User accountability poster.
- F. Use of lotus spreadsheets to track and report missing and misplaced items.
- G. Inventory by location rather than account.
- H. Center management communications.
- I. Equipment Management Specialist Poster.
- J. Astrogram reminders.

IF THIS EQUIP. IS MOVED
CONTACT THE EQUIP. SPEC.
FOR ZONE 5 AT X4-3829



IF THIS EQUIP. IS MOVED
CONTACT THE EQUIP. SPEC.
FOR ZONE 5 AT X4-3829

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FOR ZONE 5 AT X4-3829

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Found On Station (FOS) Equipment Investigation

16. - See Instructions on reverse. Please type or print clearly.

NAME AND TITLE OF INDIVIDUAL POSSESSING EQUIPMENT Dan Tiller, EQUIPMENT MANAGEMENT SPECIALIST		OFFICE/MAIL CODE 255-2	DOCUMENT NO.
ITEM NAME ***** SEE ATTACHED *****		MODEL *****	FSC *****
MANUFACTURER AND YEAR MANUFACTURED *****		SERIAL NO. *****	EQUIP. CONTROL NO. *****
ACQUISITION COST ***	LOCATION OF EQUIPMENT BLDG ***** ROOM ***** OTHER *****		DATE FOUND *****
PROPERTY CUSTODIAN (Name and signature) Dan Tiller, EQUIPMENT MANAGEMENT SPEC...		OFFICE/MAIL CODE *****	ACCOUNT CODE *****
		DATE SIGNED *****	

PART I - INVESTIGATION AND STATEMENT OF CIRCUMSTANCES

1. SOURCE OF EQUIPMENT FOUND (Check and complete where applicable)

☐ PURCHASED ☐ LEASED ☐ GOVERNMENT TRANSFER ☐ GOVERNMENT EXCESS ☐ CONTRACTOR EXCESS ☒ OTHER Transition Inventory

FROM: N/A N/A N/A
(Name of Contractor, Vendor, Government Agency) (City and State) (Date Received)

AUTHORITY: N/A N/A N/A
(Contract P.O. No. or Other) (Requester) (Org. Code)

METHOD OF DELIVERY: ☐ CONTRACTOR/VENDOR TO USER ☐ RECEIVING DOCK TO USER ☐ CONTRACTOR INSTALLED

MOTOR FREIGHT CARRIER N/A TO USER

HAND CARRIED BY N/A OTHER N/A

FABRICATED BY: N/A N/A
(Shop or Technician) (Work Order No.)

N/A N/A
(Requester) (Org. Code)

2. EXPLANATIONS (Use to explain why item was not controlled upon receipt, delivered through receiving, etc. Continue on separate sheet, if necessary)

The Zone 2 inventory team found numerous items in this Zone which meet the criteria for control and not on the Center's equipment records. These items are listed on the attached documents.

3. INVESTIGATION AND FINDINGS BY (Name and signature) Dan Tiller	4. OFFICE/MAIL CODE 255-2	5. DATE
---	------------------------------	---------

PART II - ACTIONS

1. USER DIVISION/DIRECTORATE REVIEW

a. RECOMMENDATION TO PREVENT RECURRENCE

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b. TYPED OR PRINTED NAME AND TITLE	c. SIGNATURE	d. DATE
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CAPITAL EQUIPMENT ACCOUNTABILITY MASTER RECORD INPUT
"NEMS"

F.O.S.

*1. TRANSACTION CODE--> ☐

*2. EQUIPMENT CONTROL NO.--> ☐

*3. ACQUISITION DOCUMENT NO.--> ☐

*5. ITEM NAME-->

*7. MFG. MODEL NO.-->

*9. YEAR MFG.-->

*12. COST-->

*15. USER NO.-->

*18. ROOM NO.-->

*21. AVAILABILITY STATUS CODE-->

M M D D Y Y

*4. DATE INST. ACQ.-->

*6. MFG. CODE-->

*8. SN-->

*10. FSN/NSN-->

*13. ESTIMATED COST (Y OR N)-->

*17. BLDG. NO.-->

*19. CAPITAL SENSITIVE CODE-->

☐

MFG. NAME-->

USER NAME-->
LOCAL DATA-->

*MANDATORY INPUTS

(REV. AUG. 87)

CAPITAL EQUIPMENT ACCOUNTABILITY MASTER RECORD INPUT
"NEWS"

MISPLACED EQUIPMENT

*1. TRANSACTION CODE--

*2. EQUIPMENT CONTROL NO.--

*5. ITEM NAME--

*7. MFG. MODEL NO.--

*10. BLDG NO.--

15. USER NO.--

18. ROOM NO.--

*29. PO/CONT. NO.--

MFG. NAME--

USER NAME--

LOCAL DATA--

*4. DATE FOUND

*6. ZONE

*8. SN--

11. ROOM NO.

*14. CUST. ACCT. NO.--

*17. BLDG. NO.--

AAF 1 (REV. AUG. 87)

*MANDATORY INPUTS

RECORDS CHECK

[illegible]

AAF 1 (REV. AUG. 67)

INTERNAL EQUIPMENT MOVEMENT FORM

Zone Number:	Equipment Specialist:	Mail Stop:
--------------	-----------------------	------------

Equipment Movement Information

Submitted by:	Name	Ext.	M/S	Date:
---------------	------	------	-----	-------

Decal(s) Being Moved:

Typed Name and Signature of Current User:	Org. Code:
---	------------

Typed Name and Signature of New User:	Org. Code:
---------------------------------------	------------

Current Location:	Bldg.:	Room:
-------------------	--------	-------

New Location:	Bldg.:	Room:
---------------	--------	-------

Current Org. Code:

New Org. Code:

How Long Will Equipment Require Relocation?

Other Information or Comments:

AAP 2 (Oct 88)

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EQUIPMENT USER RESPONSIBILITIES

- Properly use, care, and protect all Government equipment under the user's custody and control.
- Notify the Installation Security Operations Officer and cognizant Equipment Management Specialist immediately if theft of Government property is suspected.
- Ensure the use of Government equipment is for the conduct of official business only.
- Report missing equipment within 30 working days, and the transfer, location change, user change, cannibalization, modification, and fabrication of equipment to the cognizant Equipment Management Specialist.
- Report untagged equipment found on center (that meets the criteria for control) to the cognizant Equipment Management Specialist to establish proper controls. This responsibility includes equipment delivered directly to requestors.
- Submit NASA Form 892 (Property Pass and Removal Permit) for off-site use to the cognizant Equipment Management Specialist for concurrence, and to the cognizant Division Chief for approval, before equipment is removed. If the 30-day limit will be exceeded, property passes must include a written explanation from the user and the signature of the Branch Chief authorizing the special circumstances.
- Submit ARC Form 66 (Shipping Document) to the cognizant Equipment Management Specialist to obtain Equipment Management Branch Chief/ Contracting Officer approval before controlled equipment is sent off-site for maintenance or warranty service.
- Report equipment no longer needed, or not being actively used in pursuit of approved NASA programs and projects, to the cognizant Equipment Management Specialist. *Under no circumstances will an employee throw away Government equipment or remove Government identification decals and tags.*
- Ensure the physical identification (as such) of vendor-owned and employee-owned equipment.
- Notify the cognizant Equipment Management Specialist when terminating Ames Research Center employment.

NOTE: An employee may be subject to disciplinary action for any loss, damage, or destruction of Government property resulting from the employee's negligence, misuse, dishonesty, or wanton and willful misconduct.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
AMES RESEARCH CENTER
MOFFETT FIELD, CALIFORNIA 94035

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**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
AMES RESEARCH CENTER
MOFFETT FIELD, CALIFORNIA 94035**

RESPONSIBILITIES OF EQUIPMENT USERS

- Proper use, care, and protection of all Government equipment under their custody and control.
- Notifying the Installation Security Operations Officer Immediately if theft of Government property is suspected.
- Ensuring that Government equipment is used only in the conduct of official business.
- Reporting missing equipment, transfers, location changes, and user changes to the responsible Equipment Management Specialist.
- Reporting untagged equipment that meets the criteria for control (found on station) to the responsible Equipment Management Specialist to establish proper controls. This responsibility includes equipment delivered directly to requestors.
- Submitting NASA Form 892 (Property Pass and Removal Permit) to the cognizant Equipment Management Specialist for concurrence and to the cognizant Division Chief for approval before equipment is removed for off-site use. Property passes exceeding the 30 day limit must be accompanied by a written explanation from the user with the signature of the Branch Chief authorizing the special circumstances.
- Submitting ARC Form 68 (Shipping Document) to the cognizant Equipment Management Specialist to obtain Equipment Management Branch Chief/ Contracting Officer for approval before controlled equipment is sent off-site for maintenance or warranty service.
- Notifying the cognizant Equipment Management Specialist when equipment is not being actively used in pursuit of approved NASA programs and projects.
- Ensuring that equipment is turned in to the Property Disposal Officer when no longer needed. Under no circumstances will an employee throw away Government equipment or remove Government identification decals and tags.
- Ensuring vendor-owned and employee-owned equipment are physically identified as such.

NOTE: An employee may be subject to disciplinary action for any loss, damage, or destruction of Government property resulting from the employee's negligence, misuse, dishonesty, or wanton and willful misconduct.

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-7 1-1455102 11-7-87

ECN	ITEM NAME	MODEL NUMBER	SERIAL NUMBER	BLDG. ROOM FOUND	DATE FOUND	FOUND BY	SHOULD BE BLDG	SHOULD BE ROOM	ASSIGNED CUST ACCT
003866	CAMERA, TELEVISION	VE86A	001	208	108	EOP			
003482	DISK DRIVE UNIT	XTE190	EB8874	287	201	FAS			
003458	DISK DRIVE UNIT	XTE190	EB8877	287	201	FAS			
003484	OSCILLOSCOPE	E440	8010708	287	148F	RTA			
003708	CAMERA, POLAROID	SPECTRA	J8617B41VA	208	114	EOP			
003914	GENERATOR, PULSE	UC585	01388	287	148D	RTA			
004977	ENCORDER, TELEVISION	VA-818N	NONE	208	101	EOP1			
100876	PHOTOGRAPHIC FILM SPLICER	FM14	517	208	101	EOP1			
100752	GENERATOR/READER, TIME CODE	FE00	200544	208	108A	EOP1			
100786	BICYCLE	LA01E5	AB7C610879	208	REAR	CF			
100787	BICYCLE	LADIES	AB7C610879	208	REAR	CF			
100802	REORDER, TAPE	WM-BAC	100717	208	104	EOP			
100808	MONITOR, WAVEFORM	TU4620	08870128Z	208	105	EOP1			
100912	DETECTOR, LEAK	74810	80054	287	0001A	RTF4			
101257	POWER SUPPLY, PULSE	NONE	0-1000VDC	287	207	FAD			
101262	PRINTER, LINE	P14PA	05014947	208	230	CF			
101276	GENERATOR, CHARACTER	MC190	87-1-187	208	103	EOP1			
101285	RECEIVER, RADIO	A08TNC2468C	41884U0024	208	OUTSIDE	AA01			
101312	TRUCK, DELIVERY	438	577981	208	OUTSIDE	AA01			
101661	TRUCK, DELIVERY	438	577981	208	OUTSIDE	AA01			
101825	REORDER SET, VIDEO	CUC15	30144	287	149	BEI48			
101844	REORDER, ELECTRONIC	EB085	8-08744	287	103A	EOP1			
134552	DISK DRIVE UNIT	RG28	234	208	114	EOP			
184802	SCANNER, BAR CODE	0140-030P000	01E805	208	114	EOP			
184808	SCANNER, BAR CODE	0140-030P000	01E8184	208	114A	EOP2			
185381	DENBITMETER	TLC-903	TLC8888	287	001A	RTA			
185406	AMPLIFIER	4102	450857	287	001A	RTA			
185407	CONVERTER, DIGITAL/A	4808	85748	287	001A	RTA			
185725	MONITOR	CRT818H	087184	208	116	EOP1			
185774	CAMERA, TELEVISION	AO-140	CTH000458	208	106	EOP1			
185917	REORDER, VIDEO CASSETTE	VO-3800	78300	208	108	EOP			
214129	CAMERA, TELEVISION	NP1400	7080844	208	110B	EOP1			
214129	CAMERA, TELEVISION	FPZ-81	5030864	208	110B	EOP1			
214197	CHARGER, BATTERY	PAD 9484	11388	208	110B	EOP1			
214888	CAMERA, TELEVISION	PD-Z81UC	5091131	208	110B	EOP1			
214786	PANEL, OPERATION	DP-231U	8090810	208	108A	EOP1			

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Misplaced items

ECN	ITEM NAME	MODEL NUMBER	SERIAL NUMBER	BLOG. ROOM FOUND	DATE FOUND	FOUND BY	FOUND SHOULD BE	ROOM	ASSIGNED CUST ACCT
850811	MONITOR	M0401	5159098	245	281	27-Feb-89	MC	289	8-81 ELK10
850917	MONITOR	M0401	5145744	244	1	28-Apr-89	KJ	TA03	TE04 NIA
850918	COMPUTER, MICRO	M3650	F91081X483	244	1	23-Apr-89	KJ	TA03	TE04 NIA
851701	(424581) PRESSURE COMPUTER	6009	745-8.318	218	108	12-Apr-89	DI	227	1300 RAF14
851747	MONITOR/CRT	8001	18403	2218	170	28-Mar-89	KJ	218	884 ETT
851897	DISK DRIVE UNIT	FX40	02117748	TA15	T034	08-May-89	DI	218	102 DQ
851899	DISK DRIVE UNIT	FX40	08117340	TA15	T034	08-May-89	DI	218	118 DQ
852198	RECORDER, REPRODUCER	M101ESFNANAT	7308239DC89	211	100	07-Jul-89	MD	237	127 FAR
852819	TYPEWRITER	8014	NONE	238	114	18-Sep-89	KJ	238	8AAF1
852941	COMPUTER, MICRO	5011	F91780J	242	204	23-Jul-89	KJ	289	804 SOE08
853198	PRINTER	M4000	C49049EB	242	204	23-Jul-89	KJ	289	804 SOE08

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4-5-89 Missing Calibration Items

EDN	ITEM NAME	MODEL NUMBER	SERIAL NUMBER	BLDG. ROOM DATE FOUND	FOUND BY	BE BLOC	SHALL BE ROOM	ASSIGNED CUST ACCT
013571	OSCILLOSCOPE	585	7485			243		55007
01404	OSCILLOSCOPE	585	0838			243		55A
01739	PLUG-IN, HIGH GAIN DIFF	D	7484			243		5A01
02388	POWER SUPPLY	BR40-2A	77			286		5A01
02438	OSCILLOSCOPE	RM63	1695			243		55A
02600	PLUG-IN, LOW LEVEL DIFF	E	5984			243		5A01
02661	PLUG-IN, OSCILLOSCOPE	8478	2788			284		5A01
02708	RECORDER, 2 CH. (NR)	HK-580	125			284		5A01
02804	VOLTMETER, RMS	8400A	1860			284		5A01
02908	VTVN	400D	48442			284		5A01
02940	ANALYZER PULSE HEIGHT	.404C	9807			243		58T
02942	PLUG-IN, OSCILLOSCOPE (NR)	8A1	7504			243		55A
02944	PLUG-IN, OSCILLOSCOPE (NR)	888	2847			243		55A
02998	FAST RISE PLUG-IN	L	2161			284		5A01
02987	HYGRO-THERMOGRAPH	594	11280			284		5P
02943	HYGRO-THERMOGRAPH	594	11284			284		5A01
03170	DUAL TRACE PLUG-IN	1A1	10997			284		5A01
03208	POWER SUPPLY	84230A	11003			284		55A
03234	SHAKING INDICATOR	1E-X2	NONE			284		5A01
03340	GENERATOR PULSE (NR)	101	40217			243		5A01
03458	MULTIMETER (NR)	333	5218			284		5A01
03524	MULTIMETER DIGITAL	888	5207			284		5A01
03524	MULTIMETER, DIGITAL	7050	NONE			243		55G
03579	POWER SUPPLY (NR)	401A	8071			243		55A
03609	VOLTMETER, DIGITAL	8440A	837-08475			243		55A
03625	PLUG-IN UNIT, DV METER	8443A	N/L			243		55A
03721	POWER SUPPLY (NR)	6289A	1778			247		5A01
03737	OPERATIONAL AMP PLUG-IN	D	4498			284		5A01
03929	DVN	8840A	500742			284		5A01
03984	HYGROTHERMOGRAPH	5-194-B	4480			284		5A01
03988	VOLTMETER, RMS	820A	8011			284		5A01
04048	PLUG-IN (NR)	1402A	4483			284		5A01
04064	OSCILLOSCOPE (NR)	1418	00281			284		5A01
04083	PLUG-IN (NR)	1481A	8736			284		5A01
04107	AMPLIFIER	118	491			243		55A
04012	DEMODULATOR	C-1	10138			243		55A

Reply to Attn of **AAF:255-2/F88-185**

We plan to begin this transition in February 1989, with a target completion date of June 1989. The attached map shows the 8 property zones. They are bounded by the heavy dark lines. Some zones are split into more than one location. The property custodian locations are identified in upper left hand portion of the map. All current custodians will continue to be held accountable for equipment within their accounts until they are notified in writing that all or part of their equipment has been accounted for and transferred into new contract custodian accounts. Each contract property custodian will be responsible for monitoring equipment within their assigned area.

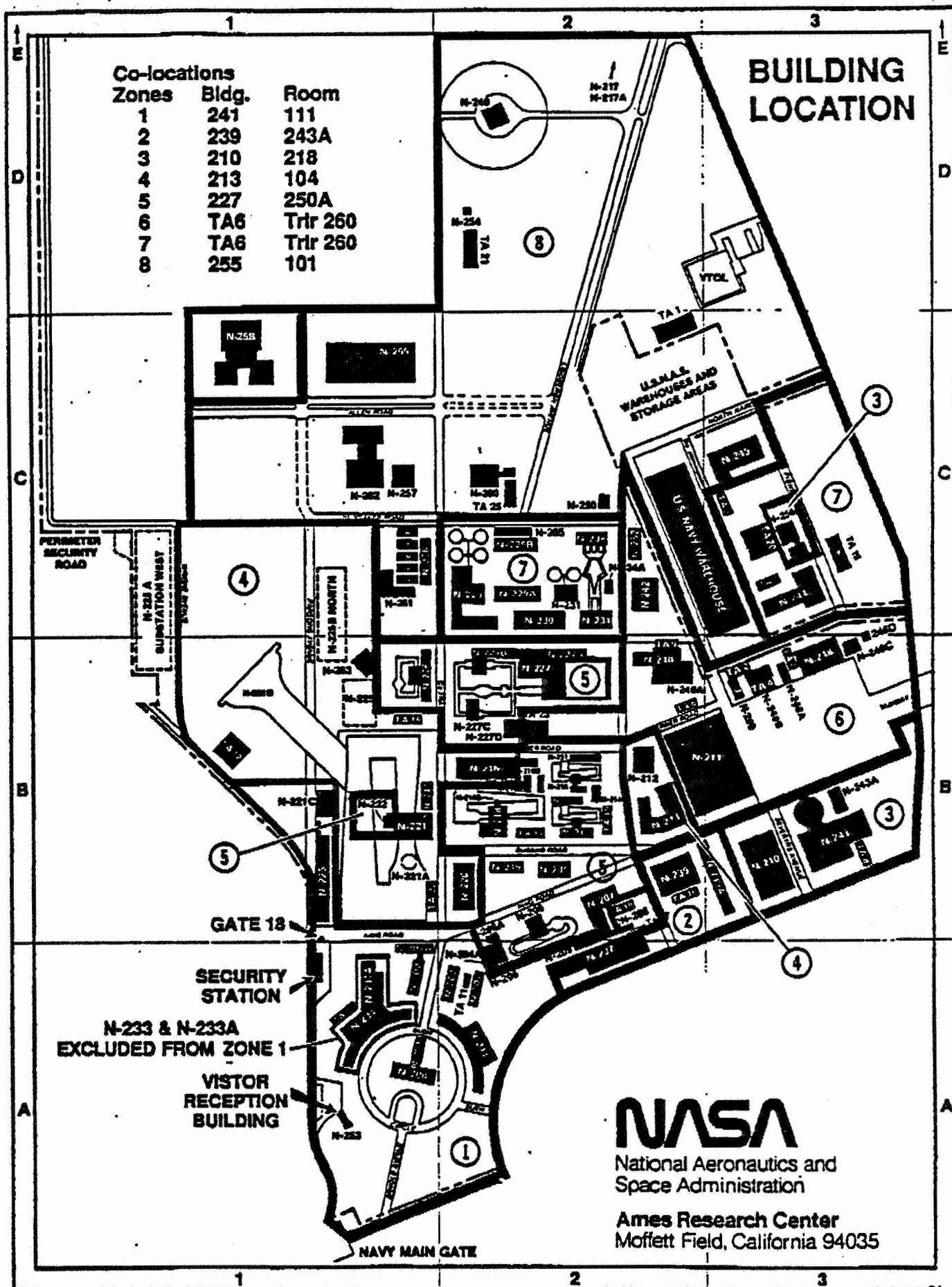
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Any policy or procedural questions may be addressed to
Rick J. Serrano, Chief, Equipment Management Branch, at extension
45137.


T. F. Hammond

Enclosure

88/257



National Aeronautics and
Space Administration
Ames Research Center
Moffett Field, California 94035

NASA

FEB 22 1989

Reply to Airmail: AAF:255-2/F89-19

TO: Ames Moffett Resident Staff
FROM: T. F. Hammond, Chief, Logistics Management Division
SUBJECT: Equipment User Responsibility

Equipment users are a vital element in maintaining our strong equipment management program. Specifically, equipment users are responsible for the proper use, calibration, repair, and condition of equipment under their control; ensuring that equipment is used only in the conduct of official business; and identifying idle equipment for possible reutilization. In addition, the user must report any movement of tagged equipment to the equipment specialist to ensure proper tracking and equipment record update. The equipment specialist for any given property management area is responsible for maintaining the individual property records (NASA Form 1602's) for equipment assigned to their account. Therefore, the master equipment records will only be as accurate as the information provided by the user. Users are expected to cooperate fully in making equipment reassignments and movements known to the appropriate equipment specialist. When an equipment item is reported lost, damaged, or destroyed, the last known user of the equipment is responsible for annotating the statement of circumstances and obtaining the cognizant Division Chief signature on the required survey report prior to submittal to the resident equipment specialist for processing.

The removal of Government property from Ames Moffett is permissible for official temporary use and when such use is necessary or beneficial to the conduct of NASA's mission or other Government purposes. Approval must be obtained via NASA Form 892, Property Pass Request and Removal Permit, signed by the cognizant equipment specialist and approved by the cognizant Division Chief.

As you know, with the exception of ED, RC, and RN, custodian responsibilities have been assumed by full-time equipment specialists of the Administrative Support Services Contractor, QUAD S Company. The laser-scanned inventory, requests for cannibalization of equipment, Found on Station (FOS) reports, and approvals for removal of equipment from Ames will be

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processed by each area specialist. All Government Furnished Property (GFP) and all equipment loans shipped via ARC Form 86 must be coordinated with the area equipment specialist. The attachment to this memorandum contains the locations, names, and phone numbers of equipment specialists, by area, along with the representatives for organizational codes ED, RC, and RN. Please keep this information for future reference.

Your cooperation will help the Center better manage its equipment by ensuring the accountable records remain accurate.


T. F. Hammond

Enclosure

89/44

PHONE NUMBERS, ETC.

EQUIP. SPEC./CUST.	ZONE	BUILDINGS SERVED	EXT.	BLDG.	ROOM
EFREN GARCIA	01	200, 201, 202, 202A, 203 204, 204A, 205, 208, 209 221C, 223, 233, 233A, 241 253, 253A, TA13, TA17, TA18	3830	241	11
DAN ILLER	02	237, 239, 239A, TA10	3826	239	243B
ROCKY HERNANDEZ	03	210, 243, 243A, 256 TA8, CROWS LNDG.	3827	210	218
MICHELLE CARBAJAL	04	212, 213, 220, 221 221A, 221B, 221C, 246 247, 263, TA12, TA21 TA22, TA16	3828	213	104
VITO PARADO	05	206, 206A, 207, 207A 214, 215, 216, 218A 218B, 218, 218A, 218B 219, 222, 226, 227 227A, 227B, 227C, 227D 235, 251, TA14, TA19	3829	229	250A
KELLY JAMES	06	211, 240, 240A, 242 248, 248A, 248B, 248C 248D, 252, 259, TA2 TA4, TA6, TA23	3825	TA08	T260
BENITA HIBBARD	07	229, 229A, 229B, 230 231, 234, 234A, 238 244, 265, TA5, TA15 TA20, TA3	3977	TA06	T260
NORMAN DeLOGE	08	217, 236, 236A, 236B 236C, 236D, 236E, 245 249, 250, 254, 255, 257 260, 261, 262, TA1 TA11, TA25, TA21	5242	255	101
TOBY GONZALES		ALL CODE RC, RIACS	5257	233	207
CONNIE PORIER		ALL CODE ED	5257	233	207
GURLEY TOMAING		258, ALL CODE RN	4428	258	252

National Aeronautics and
Space Administration

Ames Research Center
Moffett Field, California 94035

NAS

JUN 12 1989

AAAF:255-2

TO: Organizational Directors, Division Chiefs, and Branch
Chiefs

FROM: William F. Ballhaus, Jr., Director

SUBJECT: Equipment Management

I recently received the results of the 1988 equipment physical inventory and an evaluation of Ames' property management effectiveness by the Center's Property Survey Board. Both reports indicate that the Center still has significant equipment management problems. A number of the observations and recommendations focused upon: (1) the failure of some employees to follow the procedures necessary for the protection of Government property; (2) a lack of knowledge and/or attention on the part of managers to ensure adequate control of equipment assigned to their organizations; (3) a lack of documentation to support equipment activity; and (4) equipment management responsibilities that, over time, have been inappropriately delegated by management to staff level positions.

Funding for equipment acquisitions comes with the provision that we safeguard those resources. There is clear guidance for us in the NASA Equipment Management Manual (NHB 4200.1C). Specifically, paragraph 1.306 states that Division Chiefs are the principal equipment using officials responsible for the equipment assigned to their organizations, including all aspects of equipment use and condition.

I am taking this opportunity to request your personal involvement in ensuring that:

- (1) corrective actions recommended by the Property Survey Officer and Property Survey Board are completed;
- (2) individual equipment users understand they are responsible for safeguarding equipment assigned to them and will be held accountable for equipment losses due to improper care, use, or protection;
- (3) all sensitive items are assigned to the actual users;
- (4) all employees adhere to documented procedures. Of particular importance is the absolute need for equipment management personnel to be kept informed of the movement of controlled

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equipment, e.g., transfers between organizations, off-site shipments, employee home use, loans to outside organizations, etc. Under no circumstances should controlled equipment be brought to or taken from this Center without equipment management personnel coordination.

Tom Hammond, Chief of the Logistics Management Division, will be contacting each division chief to arrange a meeting with the division chief, his/her branch chiefs, and their cognizant equipment management specialist(s). The purpose of the meeting will be to clarify property management requirements, roles and responsibilities, answer questions, and assure me that everyone understands what is required in this important area of management responsibility. If needed, additional copies of NHB 4200.1C can be obtained from the Logistics Management Division, Mail Stop 241-11, extension 45671.

Wm F. Ballhaus, Jr.

William F. Ballhaus, Jr.

89/105

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06/89

CHIEF
ORG CD: AAF
MAIL STOP: 255-2

LAA08

122

98-26

EQUIPMENT IS OUR BUSINESS

LET US HELP YOU



Efren Garcia
Mail Stop 241-15
4-3830
Zone 1



Dan Iller
Mail Stop 239-7
4-3826
Zone 2



Rocky Hernandez
Mail Stop 210-12
4-3827
Zone 3



Michelle Carbajal
Mail Stop 213-6
4-3828
Zone 4



Vito Parado
Mail Stop 227-5
4-3829
Zone 5



Kelly James
Mail Stop 240A-3
4-3825
Zone 6



Benita Hibbard
Mail Stop 244-17
4-3977
Zone 7



Norman DeLoge
Mail Stop 255-2
4-5242
Zone 8

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98-27

Revised Astrogram Schedule

Deadline	Publication
Tues., Nov. 14	Fri., Nov. 24
Wed., Nov. 29	Fri., Dec. 8
Wed., Dec. 13	Fri., Dec. 22
Tues., Dec. 26	Fri., Jan. 5
Tues., Jan 9	Fri., Jan. 19
Wed., Jan 24	Fri., Feb.

Astrogram Submissions

When submitting hard copy for articles, please also send materials electronically using Microsoft Word on Macintosh disk or through NASAMail.

NASAMail submission should be addressed to: DEARDING, Attention: Astrogram.

Want Ad forms (ARC 348) can be ordered through Supply and are also available in the Astrogram Office, Building 204, Room 221.

A separate form is needed for each item to be advertised, each time it is to be run.

Technical Services Division Held Annual Picnic



Balloon racers at the Technical Services Division picnic.

The Technical Services Division held its annual picnic recently at Serra park in Sunnyvale. As in the past, everyone had a lot of fun—especially the kids. Besides some great food, there were games for everyone and a raffled dinner for two at the Velvet Turtle, won by Lee Morgan (Code ETM).

Welcome New Employees!



Front Row: Paul Langston, Edward Schilling, Roderick McAfee, Rodrigo David. Second Row: Nancy Silva, Caroline To, Jackie Bendall, Ronald Grantuska, Cheryl Wilcox. Third Row: David Sedlak, Ruth Shumard, Patricia Salihue, Jackie Holt, Sally Shaw. Fourth Row: Helen Euler, Nancy Hentz, Kazuko Nozaki, Yehia Rink, Fred Martwick. Fifth Row: Scott Richey, Khanh Nguyen, Mark Phillips, Mark Mallison.

COTR's ...

(Continued from Page 3)



Howard Goldstein (l) accepting for Paul Sawko, SueEllen Laurie, Ernest Jennings, Craig McCreight, Peter Friedland, Martin Mahmel. (Not Shown: Louis Steers.)

Branch for Space Research; SueEllen J. Laurie, selected by the Purchasing Office; Peter E. Friedland, selected by the University Affairs Branch and Paul M. Sawko was the awardee from the Contract Management Branch for Aerophysics. Mr. Sawko was not able to be present at the ceremony—vacation in Hawaii took precedence—but was represented by his branch chief, Howard Goldstein.

Congratulations to the COTR's of the Year who received a certificate, plaque and special achievement award of \$250.

Equipment is Our Business Let Us Help You

Mail Stop 227-5
Ext. 4-3829
Zone 5

Buildings Served:
206, 206A, 207,
207A, 214, 215,
216, 216A, 216B,
218, 218A, 218B,
219, 222, 226,
227, 227A, 227B,
227C, 227D, 235,
251, T036, T037,
T320, T948, T018



Vito Parado

Equipment Specialists/Custodians

Mail Stop 240A-3
Ext. 4-3825
Zone 6

Buildings Served:
211, 240, 240A,
242, 248, 248A,
248B, 248C,
248D, 252, 259,
T001, T003,
T016, T020,
T021, T023, T026,
T039, T040, T256,
T260, T272, T417, T420, T663, T921



Kelly James

MCDONNELL DOUGLAS
SPACE SYSTEMS COMPANY-KENNEDY SPACE CENTER

**22ND ANNUAL SUPPLY AND EQUIPMENT MANAGEMENT
CONFERENCE**

DECEMBER 7, 1989

CONTRACT TRANSITION PANEL

**TRANSITION TO PAYLOAD GROUND OPERATIONS CONTRACT
(PGOC) AT KENNEDY SPACE CENTER**

**J. BURL GALLOWAY
DIRECTOR, PRODUCTION SUPPORT**

BACKGROUND

- 0 PAYLOAD GROUND OPERATIONS CONTRACT (PGOC) IS THE LAST OF THE THREE MAJOR CONSOLIDATION CONTRACTS AT KENNEDY SPACE CENTER (OTHERS ARE BASE OPERATIONS CONTRACT AND SHUTTLE PROCESSING CONTRACT).
- 0 COMPETED BY NASA-KSC IN 1986.
- 0 MDSSC-KSC (THEN MDAC-KSC) AWARDED COST PLUS AWARD FEE CONTRACT EFFECTIVE JANUARY 1, 1987.
- 0 MDSSC-KSC PREVIOUSLY HAD CONTRACTS FOR INTERIM CARGO INTEGRATION OPERATIONS (ICIO) AND SPACELAB LAUNCH SITE OPERATIONS.

PAYLOAD GROUND OPERATIONS
CONTRACT (PGOC)

CONTRACT NAS10-11400

OVERALL RESPONSIBILITY FOR GROUND OPERATIONS RELATING TO NASA-KSC ASSIGNED PAYLOADS. INCLUDES PROCESSING, LOGISTICS SUPPORT, TESTING, TRANSPORTATION, OPTIONAL CUSTOMER SERVICES, EXPERIMENT INTEGRATION SUPPORT, TELEMETRY, INSTRUMENTATION, COMPUTATIONAL SERVICES, SPACE STATION PLANNING AND SUPPORT, MAINTENANCE AND SUSTAINING ENGINEERING OF PAYLOADS ASSOCIATED GROUND SYSTEMS AND FACILITIES.

NEW AREAS OF RESPONSIBILITY
FOR MDSSC-KSC UNDER PGOC

- 0 FACILITY SYSTEMS AND EQUIPMENT
- 0 SUSTAINING ENGINEERING - MODIFICATIONS SUPPORT
- 0 LOGISTICS PLANNING - SPACE STATION
- 0 KIMS AND NEMS IMPLEMENTATION AND OPERATIONS
- 0 OPERATION OF MATERIAL SERVICE CENTERS
- 0 SERVICE AND MAINTENANCE CONTRACTS
- 0 MOBILE HEAVY EQUIPMENT
- 0 TRANSPORTATION MANAGEMENT
- 0 PACKAGING AND CRATING
- 0 CLEANING - OPERATIONS AREAS
- 0 PROCUREMENT AND TECHNICAL TRAINING SUPPORT FOR
MAJOR LOCAL SUB-CONTRACTORS (BAMSI AND CSC)
- 0 CHEMICAL SAMPLING AND ANALYSIS

PGOC TRANSITION PLANNED/IMPLEMENTED

0 PGOC ORGANIZATION IN PLACE BEFORE AUTHORITY TO PROCEED

0 PLANS AND SCHEDULES READY AT ATP

0 SIX TEAMS IDENTIFIED AND IN POSITION AT ATP

0 TEAM WORK (NASA/MDSSC/INCUMBENTS)

0 TRANSITION AND TURNOVER

- TRANSITION (RESPONSIBILITY AND PERSONNEL)
FOUR COMPLETED AT ATP, TWO COMPLETED IN 30 DAYS

- TURNOVER (MATERIAL, EQUIPMENT, DOCUMENTATION AND SOFTWARE)
COMPLETED SIXTEEN WEEKS AFTER ATP

PGOC TRANSITION PLANNED/IMPLEMENTED (CONT)

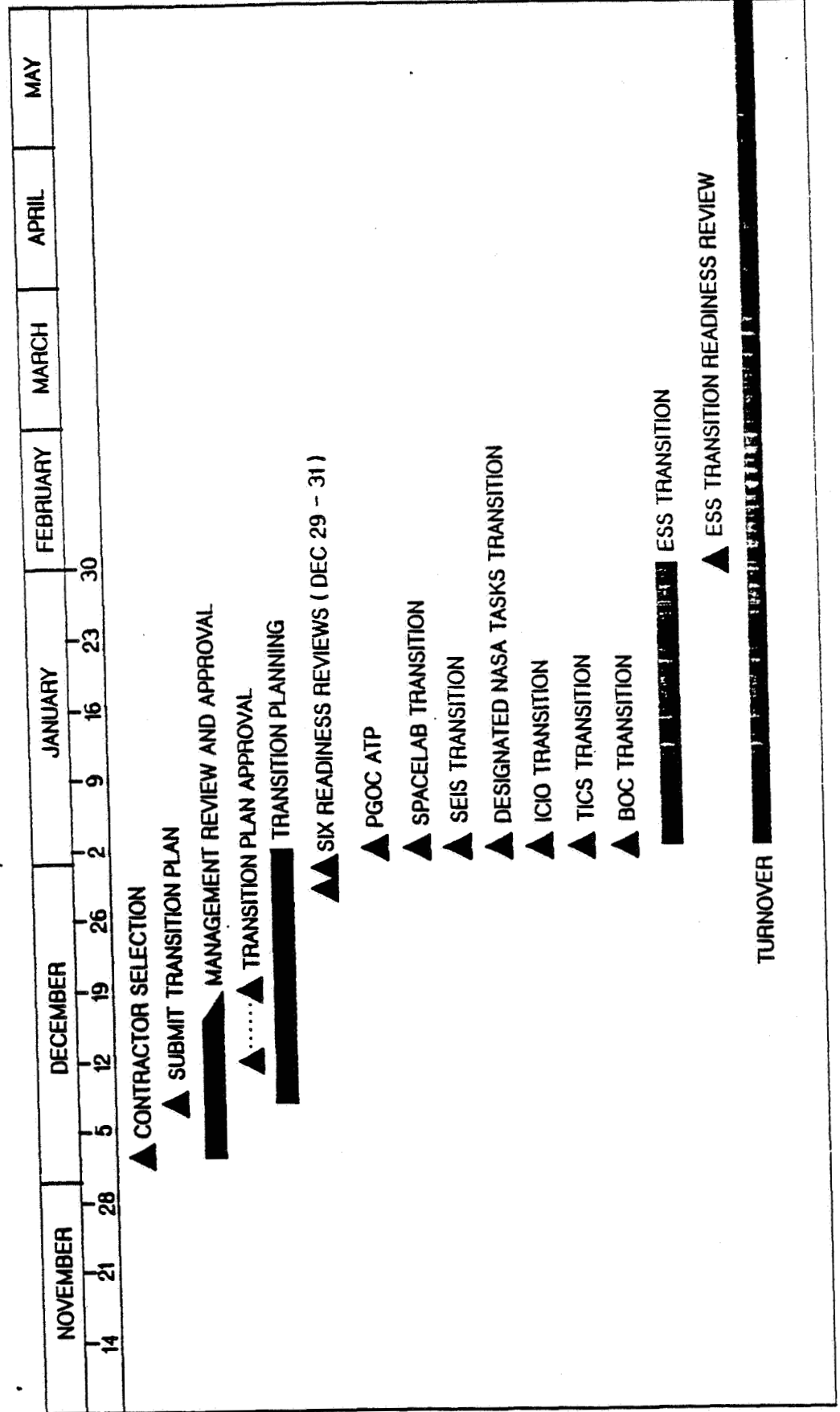
0 JOINT ACTIONS ASSIGNED WITH FORMAL FOLLOW-UP

0 WEEKLY TEAM PROGRESS REVIEWS CONDUCTED

0 MASTER TURNOVER SCHEDULE MAINTAINED

**0 SMOOTH TRANSITION/TURNOVER ACHIEVED WITH
MINIMUM DISRUPTION TO ONGOING ACTIVITIES.**

PGOC TRANSITION / TURNOVER SCHEDULE



27 MARCH 1987

CONTROLLED EQUIPMENT/MATERIAL/SOFTWARE TURNOVER				
INCUMBENT	1987 JANUARY	FEBRUARY	MARCH	APRIL
NASA EI/PPP MATERIAL EQUIPMENT SOFTWARE		<div>██████████</div> <div>██████████</div> <div>██████████</div>	<div>██████████</div> <div>██████████</div> <div>██████████</div>	<div>██████████</div> <div>██████████</div> <div>██████████</div>
ESS (PRC) MATERIAL EQUIPMENT SOFTWARE		<div>██████████</div> <div>██████████</div> <div>██████████</div>	<div>██████████</div> <div>██████████</div> <div>██████████</div>	<div>██████████</div> <div>██████████</div> <div>██████████</div>
BOC (EG&G) MATERIAL EQUIPMENT		<div>██████████</div> <div>██████████</div> <div>██████████</div>	<div>██████████</div> <div>██████████</div> <div>██████████</div>	<div>██████████</div> <div>██████████</div> <div>██████████</div>
TICS (CSC) MATERIAL EQUIPMENT		<div>██████████</div> <div>██████████</div> <div>██████████</div>	<div>██████████</div> <div>██████████</div> <div>██████████</div>	<div>██████████</div> <div>██████████</div> <div>██████████</div>
ICIO MATERIAL EQUIPMENT		<div>██████████</div> <div>██████████</div> <div>██████████</div>	<div>██████████</div> <div>██████████</div> <div>██████████</div>	<div>██████████</div> <div>██████████</div> <div>██████████</div>
SPACELAB MATERIAL EQUIPMENT SOFTWARE		<div>██████████</div> <div>██████████</div> <div>██████████</div>	<div>██████████</div> <div>██████████</div> <div>██████████</div>	<div>██████████</div> <div>██████████</div> <div>██████████</div>

NOTES
1. SEE NMC PREPARED DOCUMENT
SCHEDULES FOR DETAILS
2. COLLABORAL FACILITY AND
DOCUMENTATION REVIEW PER
SPACE SCHEDULE

APPROVAL
BUT GALLAGHER MDAC-KSC
DAN McGRATH NASA
JAY REYNOLDS MDAC-KSC
FRANCIS STUMP NASA

LESSONS LEARNED

- 0 TRANSITION WAS SUCCESSFUL BECAUSE:
 - PARTNERSHIP MODE - NASA AND MDSSC
 - STABLE ORGANIZATION IN PLACE
 - DETAILED PLANS PREPARED
 - CLEAR FOCAL POINTS FOR NASA AND MDSSC
 - REGULAR JOINT MEETINGS WITH UPDATED SCHEDULES AND ACTION ITEMS
- 0 EMPHASIS ON FACILITY SYSTEMS AND EQUIPMENT
 - FOCAL POINTS
 - SPARES AND REPAIR PARTS
 - DOCUMENTATION
- 0 IMPORTANCE OF TRAINING
 - NEW TASKS
 - NEW POLICIES AND PROCEDURES
 - IMPROVED ON-THE-JOB (OJT) TRAINING

CONTRACT-TO-CONTRACT TRANSITION PANEL

**22nd Annual NASA Supply and Equipment
Management Conference**

**NASA KENNEDY SPACE CENTER
December 5 - 7, 1989**

PANEL MEMBERS

LeRC

**Judith M. Stazzone,
Head, Support Operations Office**

**Craig Wilson,
Project Manager, Cortez**

PANEL MEMBERS

ARC

**Travis Brown, Chief,
Supply and Transportation Branch**

**Bennie Opie, Project Manager,
Dryden, Quad-S**

PANEL MEMBERS

KSC

**Francis B. Stump,
Chief, Payload Support Division**

**J. Burl Galloway,
Director, Product Support,
McDonnell Douglas Space Systems Co.**

**NASA LEWIS RESEARCH CENTER
CLASS**

Judith M. Stazzone

WHAT HAS LEWIS EXPERIENCED?

- ♦ **Short lead time between contract signing and start**
- ♦ **Multiple phase-in dates**
- ♦ **Training of Technical Representatives**

HOW HAVE WE IMPROVED?

- ♦ **Phase-in of administrative and clerical option**
- ♦ **Centerwide impact**
- ♦ **Appoint/train monitoring organization**
- ♦ **Funding**
- ♦ **Tours**
- ♦ **Contract/CS management interface**

EFFECTIVE MONITORING ORGANIZATION

22ND ANNUAL SUPPLY AND EQUIPMENT MANAGEMENT CONFERENCE

**PAYLOAD LOGISTICS TRANSITION
SAME CONTRACTOR--DIFFERENT RESPONSIBILITIES**

Presented by:
Francis B. Stump
Chief, Payload Support Division



PAYLOAD LOGISTICS SYSTEM TRANSITION
SAME CONTRACTOR - DIFFERENT RESPONSIBILITIES

RESPONSIBILITY EVOLUTION

ORIGINALLY: CENTRALIZED LOGISTICS SYSTEM (1 CONTRACTOR)

INTERIM: DE-CENTRALIZED LOGISTICS SYSTEM (HYBRID) (3 CONTRACTORS)

BASE OPERATIONS CONTRACTOR (BOC)

- OPERATE AND MAINTAIN INVENTORY MANAGEMENT SYSTEMS (KIMS AND NEMS)
- TOTAL BOC LOGISTICS SYSTEM
- SUPPORTED PAYLOAD SUPPORT CONTRACTOR BY:
 - PERFORMING NEW ITEM LOAD
 - PERFORMING CATALOGING
 - PERFORMING USER CONTROL
 - ESTABLISHING AND SERVICING BENCH STOCK
 - MANAGING EQUIPMENT INVENTORY
 - SHIPPING AND RECEIVING
 - PROCURING

SHUTTLE PROCESSING CONTRACTOR (SPC)

- STAND-ALONE LOGISTICS SYSTEM UTILIZING KIMS AND NEMS



PAYLOAD LOGISTICS - ITEM TRANSITION
SAME CONTRACTOR - DIFFERENT RESPONSIBILITIES

RESPONSIBILITY EVOLUTION (CONT'D)

PAYLOAD SUPPORT CONTRACTOR

- UTILIZED HAND RECEIPT ACCOUNTS FOR EQUIPMENT MANAGED BY BOC IN NEMS
- REQUESTED CATALOGING AND NEW ITEM LOAD SERVICES FROM BOC
- REQUESTED BENCH STOCK ESTABLISHMENT AND SERVICING FROM BOC
- UTILIZED PARTITION OF KIMS TO MANAGE AND ISSUE FLIGHT ITEMS OF INVENTORY
- PARTIAL PROCUREMENT IN HOUSE - PARTIAL BY BOC



PAYLOAD LOGISTICS SYSTEM TRANSITION
SAME CONTRACTOR - DIFFERENT RESPONSIBILITIES

RESPONSIBILITY EVOLUTION (CONT'D)

POST TRANSITION: THREE STAND-ALONE CONTRACTORS

- BOC MANAGE BASE SUPPORT INVENTORY AND OPERATE AND MAINTAIN THE INVENTORY MANAGEMENT SYSTEMS (NEMS, KIMS)
- SPC MANAGE THE SHUTTLE PROCESSING INVENTORY UTILIZING THE CENTER INVENTORY MANAGEMENT RESOURCES (NEMS, KIMS)
- PGOC MANAGE THE PAYLOAD OPERATIONS INVENTORY UTILIZING THE CENTER INVENTORY MANAGEMENT RESOURCES (NEMS, KIMS)



PAYLOAD LOGISTICS SYSTEM TRANSITION
SAME CONTRACTOR - DIFFERENT RESPONSIBILITIES

SUMMARY OF LESSONS LEARNED

JANUARY 1, 1987: NASA AND MCDONNELL DOUGLAS IMPLEMENTED THE TRANSITION TO
THE PGOC STAND-ALONE SYSTEM.

STAND-ALONE SYSTEM INCLUDES:

- 60,000 LINE ITEMS OF SUPPLIES
- 7,200 LINE ITEMS OF EQUIPMENT
- 26 NEW AREAS OF FACILITY AND FACILITY SYSTEMS FOR OPERATIONS AND MAINTENANCE
- ESTABLISHING USER CONTROL
- ESTABLISHING NEW ITEM LOAD AND CATALOGING
- TRANSFERRING NUMEROUS RECORDS AND ASSETS FROM BOC
- SECURING MANY TERMINALS TO ACCESS KIMS AND NEMS
- TRANSPORTATION MANAGEMENT
- SHIPPING AND RECEIVING
- ADDITIONAL WAREHOUSING
- TOTAL PROCUREMENT



PAYLOAD LOGISTICS SYSTEM TRANSITION
SAME CONTRACTOR - DIFFERENT RESPONSIBILITIES

SUMMARY OF LESSONS LEARNED (CONT'D)

POSITIVE PERFORMANCE

PGOC STEPPED UP TO THE RESPONSIBILITIES AND HAS DISCHARGED THEM IN A VERY PROFESSIONAL MANNER THROUGH THE EARLY DEVELOPMENT OF PLANS AND LONG-TERM IMPLEMENTATION.

BOC HAS BEEN VERY RESPONSIVE TO NEEDS AND HAS HELPED IN GETTING THE SYSTEM IN PLACE INCLUDING SUBCONTRACTING TO PGOC FOR SUPPORT.

POTENTIAL ENHANCEMENTS

THE GOVERNMENT ANTICIPATED THE TRANSITION IMPACT, HOWEVER IT COULD HAVE BEEN DECREASED BY:

- HAVING MORE TERMINALS IN PLACE FOR KIMS AND NEMS.
- HAVING A MORE PHASED TRANSITION OF RESPONSIBILITIES.
- ACQUIRING ADDITIONAL ASSETS FOR FACILITY SYSTEMS AND EQUIPMENT FOR TURNOVER TO PGOC.
- MAKING A DETAILED TRANSITION PLAN A PART OF THE SOW AND CONTRACT.



BE ABLE TO IDENTIFY:

- **THE STRUCTURE OF THE ORGANIZATION**
- **THE OVERALL MISSION**
- **THE MANNER IN WHICH THE CONTRACTOR CONTRIBUTES TO MISSION ACCOMPLISHMENTS**
- **THE PEOPLE WHO PERFORM THE TASK**

TRAINING SHOULD BE CONDUCTED WITH THE ADOPTION OF:

- **POLICIES**
- **NEW PROCEDURES**
- **SYSTEMS**
- **MODIFICATIONS & CHANGES**
- **PLANS OF OPERATION**

CROSS-UTILIZATION

- A QUALIFIED SUBSTITUTE WILL BE AVAILABLE.
- ASSURES THAT ALL REQUIRED FUNCTIONS WILL BE PERFORMED.
- PREPARE PERSONNEL FOR DIFFICULT, RESPONSIBLE OR COMPLICATED JOBS.

BASIC SAFETY PROCEDURES

- MAINTAIN A SAFE WORKPLACE.
- ENCOURAGE EMPLOYEES TO REPORT HAZARDS.
- OFFICES & PLANTS SHOULD BE CLEAN, WELL DESIGNED, AND CONTROLLED FOR NOISE, HEAT, DUST AND FUMES.
- PLANTS NEED GOOD PREVENTATIVE MAINTENANCE PROGRAMS FOR PRODUCTION EQUIPMENT.
- INSPECT MONTHLY OR QUARTERLY.
- SAFETY AUDITS SHOULD BE COMPLETED ANNUALLY.
- BASE SAFETY TRAINING ON SPECIFIC HAZARD INFORMATION.
- MAKE REFRESHER SAFETY TRAINING AVAILABLE ON A CONTINUING BASIS FOR ALL EMPLOYEES INCLUDING SUPERVISORS.

SUPPORT EQUIPMENT

- OFFICE
- VEHICLES
- MATERIAL HANDLING
- AUTOMATIC DATA PROCESSING

6

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SUPPLY WORKSHOP

Data Base Administrator Workshop

• The Data Base Administrator Workshop will cover the following topics:

- Data & File Conversion (*GENERAL*)
- Test Files/Production Files
- Install Materials & Processes, e.g., PREDICT
- DASD Requirements
- Security - Application & ADABAS Security by Value
- Hardware/Software Environment
- Open Discussions

S&EM - NSMS Technical Workshop

December 7, 1989



System Administrator Workshop - Installation & Training

- **Installation**
 - Load NSMS application software
 - Load NSMS training data base
 - Validate NSMS
 - Training
 - **MSFC (alpha test)/ ARC Moffett (beta test)**
 - Testing as per NSMS Test Plan and Procedures, AIM-NSMS-DID-18
 - Site data conversion
 - Site acceptance testing as per Site Test Plan and Procedures



S&EM - NSMS Technical Workshop

December 6, 1989

December 6, 1989

**System Administrator Workshop -
Site Specifics**

- **User Exits Strategy (*what it can do*)**
 - How User Exits Fit Into The NSMS Transaction Scheme
- **Transaction Accounting Information**
 - How to customize on-line accounting information
 - How accounting information is stored
- **Pre-commit User Exit**
 - Possible uses
- **Post-commit User Exit**
 - Possible uses

S&EM - NSMS Technical Workshop

December 6, 1989



**System Administrator Workshop -
Special Features**

- **Pop-up Windows**
- **On-line Help Text**
- **Bar Coding Capability**

S&EM - NSMS Technical Workshop
December 6, 1989



**System Administrator Workshop -
Menu Structure/Customization**

- **How To Customize A Menu**
- **Moving/adding/removing selections**

S&EM - NSMS Technical Workshop
December 6, 1989



NSMS General Status Workshop

• The General Status Workshop will cover the following topics:

- NSMS Development Status
- Special Features
- Installation & Training

S&EM - NSMS Technical Workshop

December 5, 1989



Bornier Handlines

SPR

System Analysis

PDR

NOVEMBER 1988

Design

CDR

APRIL 1989

Coding & Integration Testing

TRR

MARCH 1990

**BETA TEST
ARC -
MOFFETT
JUNE 1990**

**ALPHA TEST
MSFC
APRIL 1990**

INSTALLS

October 1990

S&EM-12/89-01



S&EM - NSMS Technical Workshop

December 5, 1989

232
163

General Status Workshop -
Special Features: *Disseminated in NSMS
Development*

June Balance

- Pop-up Windows

- On-line Help Text

- Menu Customization

*Institute
I put a link
to the
conference*

S&EM - NSMS Technical Workshop
December 5, 1989



General Status Workshop - Installation & Training

D. Chapman

• Site Installation Plan

- Follows generic Site Installation Plan, AIM-NSMS-DID-21
- Due 120 days prior to scheduled installation

• Site Preinstallation Visit

- Approx 30 days prior to scheduled installation
- Verification of site readiness
 - Hardware and software platform
 - Training facilities and equipment
 - Training requirements
 - Participating personnel identified

S&EM - NSMS Technical Workshop

December 5, 1989



General Status Workshop - Installation & Training

- **Installation**
 - Load NSMS application software
 - Load NSMS training data base
 - Validate NSMS
 - Training
 - MSFC (alpha test)/ ARC Moffett (beta test)
 - Testing as per NSMS Test Plan and Procedures, AIM-NSMS-DID-18
 - Site data conversion
 - Site acceptance testing as per Site Test Plan and Procedures

S&EM - NSMS Technical Workshop

December 5, 1989



Lead Programmer Workshop

- **The Lead Programmer Workshop will cover the following topics:**
 - **Site Specifics**
 - **Technical Aspects of NSMS**
 - **Security**
 - **Menu Structure & Customization**
 - **Special Features**
 - **Data File Conversion**
 - **Open Discussions**

S&EM - NSMS Technical Workshop

December 5, 1989



Lead Programmer Workshop - Site Specifics

• User Exits

- How User Exits Fit Into The NSMS Transaction Scheme
- Pre-commit User Exit
 - Possible uses
 - Rules for pre-commit user exit
- Post-commit User Exit
 - Possible uses
 - Transaction notification scheme
 - Rules for post-commit user exit

S&EM - NSMS Technical Workshop

December 5, 1989



**Lead Programmer Workshop -
Site Specifics**

- **Code Customization/Generation**
- Rules for adding local transactions
- Naming standards for fields, files, and transactions

S&EM - NSMS Technical Workshop
December 5, 1989



**Lead Programmer Workshop -
Technical Aspects of NSMS**

- **Security**
 - Application
 - ADABAS
- **Menu Structure/Customization**
- **Special Features**
 - Standards

S&EM - NSMS Technical Workshop

December 5, 1989



**Lead Programmer Workshop -
Data File Conversion**

- **NSMS Data Loaders**
- **Required Loading Sequence**
- **Data Loader Edits (*what they look for*)**

S&EM - NSMS Technical Workshop

December 5, 1989



System Administrator Workshop

• The System Administrator Workshop will cover the following topics:

- Installation & Training**
- Security**
- Menu Structure & Customization**
- Special Features**
- Site Specifics**
- Open Discussions**

S&EM - NSMS Technical Workshop

December 6, 1989



System Administrator Workshop - Installation & Training

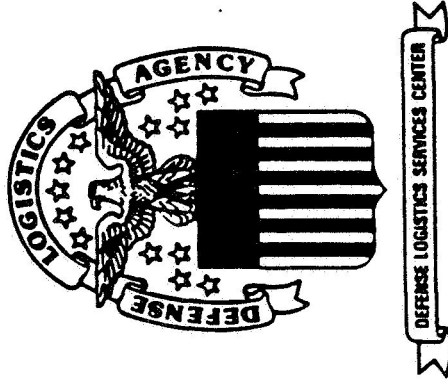
- **Site Installation Plan**
 - Follows generic Site Installation Plan, AIM-NSMS-DID-21
 - Due 120 days prior to scheduled installation
- **Site Preinstallation Visit**
 - Approx 30 days prior to scheduled installation
 - Verification of site readiness
 - Hardware and software platform
 - Training facilities and equipment
 - Training requirements
 - Participating personnel identified



S&EM - NSMS Technical Workshop

December 6, 1989

DEFENSE LOGISTICS SERVICES CENTER (DLSC)



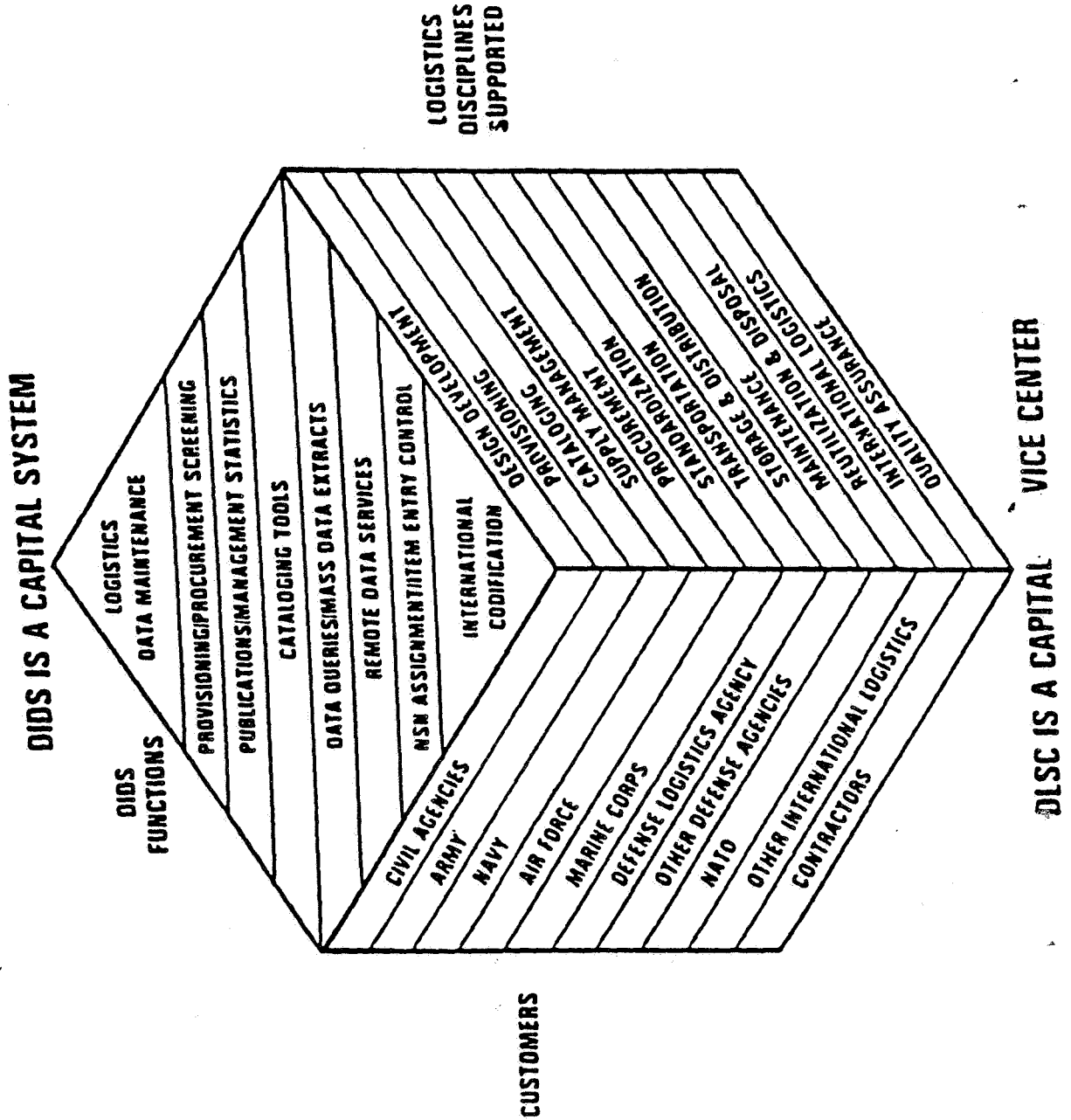
PRODUCTS AND SERVICES

Briefer: Marjorie Lanko

DLSC

- Responsible for Federal Catalog System
- Develop and maintain Defense Integrated Data System (DIDS)
- Disseminate Logistics Management Information

DLSC/DIDS



DLSC GOAL I

**Ensure Appropriate Distribution of
Products and Services Necessary to
Meet Weapon System Readiness and
Sustainability Needs.**

DLSC GOAL II

Make the Best Use of Technology to
Deliver the Needed Products and
Services

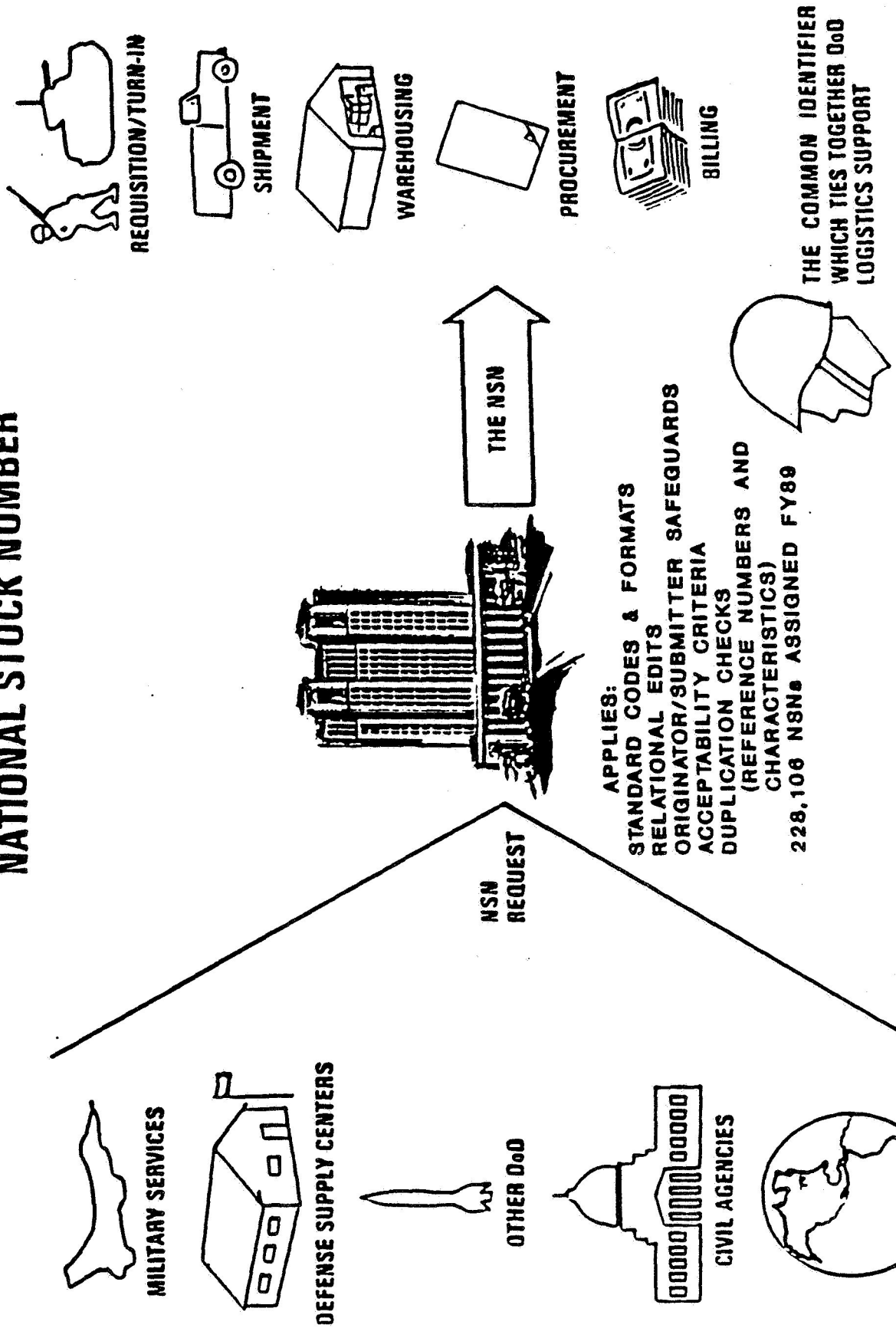
- Modernization
- LOGRUN
- FED LOG
- CBT

DLSC DATA BASE INFORMATION

- Approximately 6 1/2 Million National Stock Numbers
 - Item Identification
 - Item Managers/Users
 - Manufacturer/Part Numbers
 - Interchangeability/Substitutability
 - Freight
 - Management (Unit Price, Source of Supply)
 - Characteristics (Description)

MAINTAINING THE INFORMATION RESOURCE

NATIONAL STOCK NUMBER

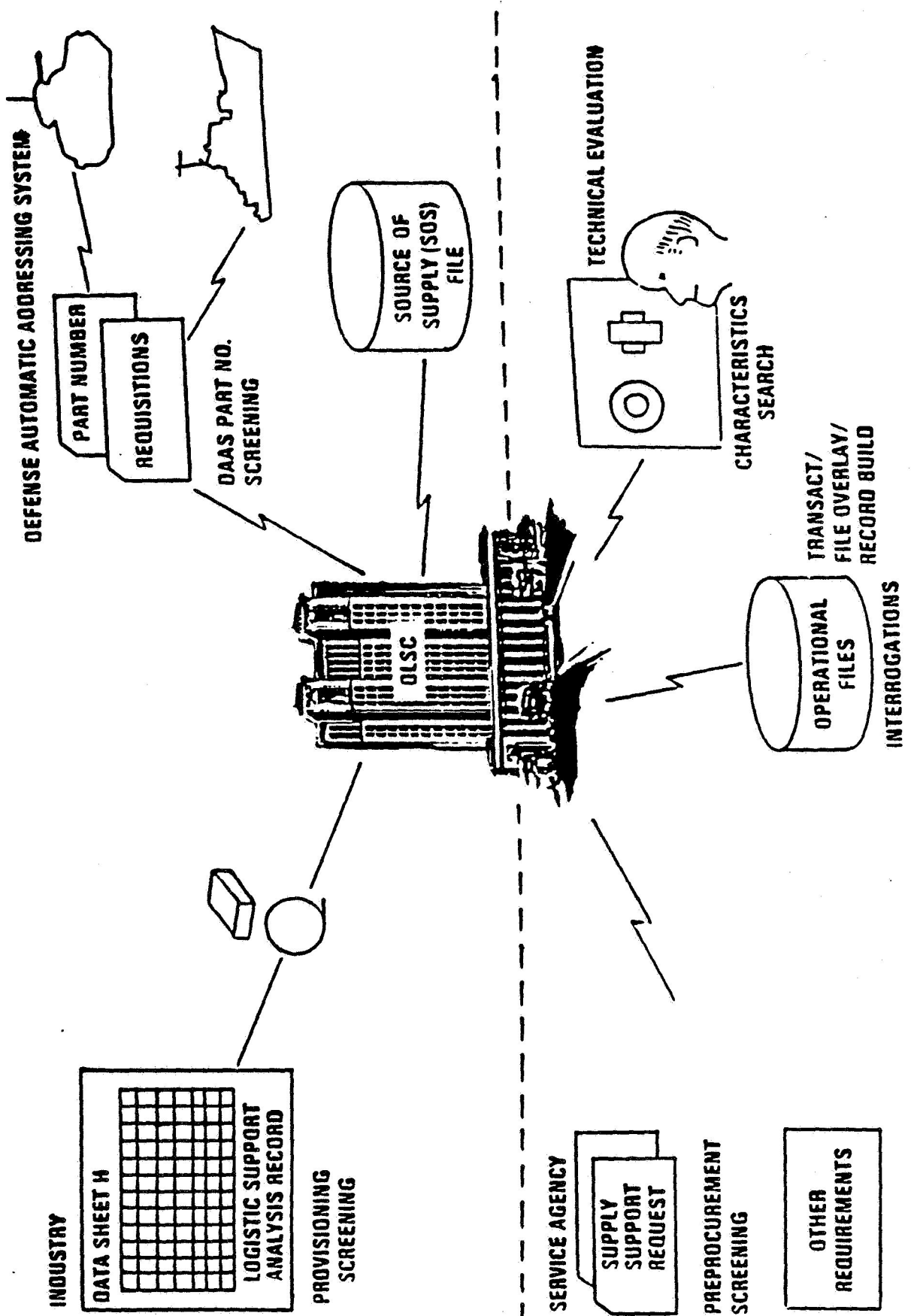


INFORMATION DISSEMINATION

- NIIN/REFERENCE NUMBER/
CHARACTERISTIC QUERIES
- LOGRUN
- FED LOG
- MEDALS ✓
- PUBLICATIONS
- MASS DATA RETRIEVAL/AUTOMATED
TABULAR STUDY LIST ✓

INFORMATION ACCESS

NIIN/REFERENCE NUMBER/CHARACTERISTIC QUERIES



LOGISTICS REMOTE USERS NETWORK LOGRUN

- Designed to Provide Immediate, On-line Access to DIDS and other Logistics Information
- Currently Supports Over 1231 Access
- Uses Defense Logistics Agency Teleprocessing Network (DLANET)
- Connectivity call:
DLSC-JCB
AV932-7409 FTS552-7409
Commercial (616)961-7409

LOGISTICS REMOTE USERS NETWORK LOGRUN

- Inquiry
- Characteristic Search
- FSC/FSG/INC
- Depot Maintenance *Unit*
- MEDALS
- CAGE
- Specialized Data Base

FEDERAL LOGISTICS DATA ON COMPACT DISC

FED LOG

- Contains Logistics Information found in 7 Publications
- Service Unique Data - Army / Air Force / Navy
- 250 Prototype sets
- Acquisition Projected August 1990

RFF - Nov

MILITARY ENGINEERING DATA ASSETS LOCATOR SYSTEM

MEDALS

- Implemented October 1988
- Index of Technical Data
- Locate sources of Technical Data
11,821,361 Drawing Numbers/Data

Assets

1,366,633 NIINS

15,056,076 Part Numbers

- Equipment - Remote Terminal and/or
Computer to Computer Links

- 27 DoD Repositories → ? LOG-CAN

- Locates Technical Data in Seconds

PUBLICATIONS

- Master Cross Reference List (MCRL)
- Reference Numbers/NSNs
- Management List (ML-C)
- Unit Price, Source of Supply
- Identification List (IL)
- Descriptive Data
- Federal Item Logistics Data Record (FILDR)
- Descriptive Data
- 346 Million Microfiche
- Over 50,000 Customers

DATA EXTRACT

- Mass Data Retrieval (MDR)
- Automated Tabular Study List (ATSL)

*depression
reduction*

TRAINING

- In-house DLSC
- Customer's Site
- Computer Based Training (CBT)
- Private Sector
- Foreign Governments

COMPUTER BASED TRAINING

- Used on IBM Compatible Personal Computer
- Easy Access
- Cost Effective *--- not*
- No Classroom Requirements
- CBTs Developed
 - LOGRUN
 - MEDALS
 - FED LOG
 - NSN Development
 - Introduction to FCS

MODERNIZATION

- On-Line File Update
- Tailored Publications
- Quicker SCR Processing
- Ad Hoc Query
 - MDR - *update*
 - DIDS Procedures - *manual - on-line*
 - On-Line
 - CD-ROM
- Flexible
- Fast Response

CUSTOMER SUPPORT

INFORMATION MUST BE:

TIMELY

USABLE

FLEXIBLE

ACCESSIBLE

ACCURATE

CUSTOMER SUPPORT GOVERNMENT ACTIVITIES →

- CUSTOMER SERVICE OFFICE

AUTOVON 932-4725

FTS 552-4725

COMMERCIAL 616-961-4725

DDN ✕-MAIL dlscjbd%dlscg2.uucpedsa.dla.mil ✓

FAX 932-4265

- INFORMATION PACKAGES

AUTOVON 932-4676

FTS 552-4676

COMMERCIAL 616-961-4676

E-MAIL/FAX (same as above)

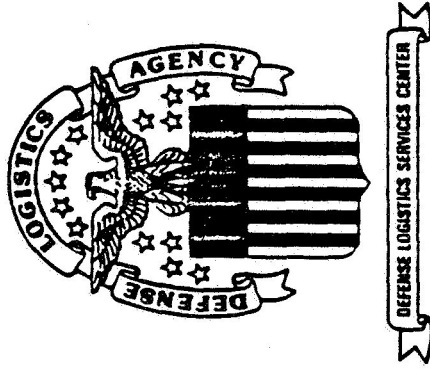
✓
*For info
see page 4 of 10*

**CUSTOMER SUPPORT
PRIVATE SECTOR**

Confidential

- **FREEDOM OF INFORMATION
OFFICE
COMMERCIAL 616-961-4955
FAX 616-961-4265**
- **INFORMATION PACKAGES
(same as above)**

DEFENSE LOGISTICS SERVICES CENTER (DLSC)



MODERNIZATION

Briefer: Marjorie Lanko

PURPOSE

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To Provide Information on the
DLSC Systems Modernization
Effort and the Improvements in
Logistics Support it will Provide
to the Logistics Community

OVERVIEW

- Background
- Approach/Strategy
- Benefits
- Current status

NEED TO MODERNIZE

RATIONALE

- Responsibility
 - Maintain operational status
 - Implement new functions
- Substantial evaluation of:
 - Automated information system (AIS)
 - Customer satisfaction
 - Future requirements

CURRENT DEFICIENCIES

- Capacity exhaustion (FY89)
- Inflexible data base & software
- Nonresponsive
 - System changes
 - DoD logistic changes
- Continuity of operations

CONSEQUENCES

- Inability to:
 - Provide timely access
 - Provide integrated solutions
 - Add new functions
 - Provide continuity of operations
- Growth of duplicate items in inventory

OBJECTIVES

- Support customer requirements
- Increase productivity
- Eliminate deficiencies
- Preclude capacity shortfall
- Improve data quality

USER REQUIREMENTS

Web requirements!

- Integrate with user data bases
- Expand/enhance data access
- Increase flexibility
- Tailored data extracts
- On-Line updates
- Uninterruptable system

TRANSITION STRATEGY

209
192

SOFTWARE IMPLEMENTATION PLAN

CA	CA + 9 MOS.	INC. 1+3 MOS.	INC. 2+6 MOS.	INC. 3+6 MOS.
	INCREMENT 1	INCREMENT 2	INCREMENT 3	INCREMENT 4
V E N D O R	SYSTEM SOFTWARE DBMS ON-LINE SYSTEMS	MANAGEMENT STATISTICS INFORMATION DISSEMINATION	DATA RETRIEVAL	DRAWING CROSS- REFERENCE
D L S C			MEDALS CHAR. DATA MANAGEMENT	MANAGEMENT OF DATA BASE NATO CATALOGING TOOLS

BENEFITS

- Improved responsiveness to user
- Improved NSN match rate
- Cataloger efficiency
- Publications
- Packaging segment
- Medals enhancements

PROGRAM MILESTONES AND SCHEDULE

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194

MILESTONE		APPROVED SCHEDULE	COMPLETED
ACQUISITION			
REVISE RFP		APR 88	SEP 88
DLA REVIEW		OCT 88	OCT 88
RELEASE RFP		NOV 88	NOV 88
CONTRACT AWARD		FEB 90	
INITIAL INSTALLATION		JUL 90	
DEVELOPMENT			
FUNCTIONAL DESCRIPTION		APR 88	AUG 88
SYSTEM SPECS		JAN 91	
PROGRAMS		SEP 91	
TESTING ACTIVITIES		OCT 91	
FULL IMPLEMENTATION		MAR 92	
FUNC. PROGRAM REVIEW		JUN 92	

SUMMARY

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~~195~~

- **Why DLSC needs to modernize**
- **Objectives to be realized**
- **Functional user requirements**
- **Aggressive acquisition strategy**
- **Incremental transition strategy**
- **Benefits to be realized**
- **Current status**

BAR CODE PRESENTATION

EG&G FLORIDA, INC.

PRESENTERS:
M. BLANTON
G. KNIGHTON
L. BLOCKER

OVERVIEW

- KENNEDY INVENTORY MANAGEMENT SYSTEM
 - BAR CODING CONSIDERATIONS
- WHERE WE'VE BEEN, ARE, AND ARE GOING
 - HARDWARE
 - SOFTWARE

2/8/97

KENNEDY INVENTORY MANAGEMENT SYSTEMS (KIMS)

- **Three Contractors**
- **Four Accounts**
- **Six Hundred People**
- **345,000 Line Items**
- **900+ Programs**
- **555,000 Lines of Code**

WHY BAR CODE?

- **Accuracy**
- **Speed**
- **Economy**
- **Versatility**

BAR CODING IN KIMS

- PAST -

- October 1988 Established Bar Code Working Group

**- November 1988 High Level Functional Requirements
 to
 May 1989 in Ten Specific Areas of operation**

BAR CODING IN KIMS

- PRESENT -

- Hardware Acquisition Plan**
- Request for Proposal (RFP)**

BAR CODING IN KIMS

- FUTURE -

Bench Stock	JUN '90
Tools/Garments	JUN '90
Inventory	JUL '90
Receiving	NOV '91
Warehouse Operations	NOV '91
MOD Kits	NOV '91
Containers	NOV '91
Catalogs	NOV '91
Transportation	DEC '91
Procurement	JAN '92

BAR CODE HARDWARE REQUIREMENTS

- BAR CODE HARDWARE REQUIRED TO:

- Produce bar coded data sources
- Provide for Bar Code scanning

- BAR CODED DATA SOURCE REQUIREMENTS:

- Labels
- Management reports
- Menu books of high use data
- Transaction documents

BAR CODE HARDWARE REQUIREMENTS (cont)

- DATA SOURCE PRODUCTION CONSIDERATIONS:

- Data sources that must be produced on KIMS**
- Data sources that could be produced outside KIMS**
- KIMS data is not static**
- Cost of vendor production as compared to onsite vendor costs**

BAR CODE HARDWARE REQUIREMENTS (cont)

- CURRENT KIMS HARDWARE:

- System printers
- Workstation printers

- DATA SOURCE PRODUCTION SOLUTIONS:

- Utilize Xerox Laser printers
- Replace existing receive only printers
- Procure Thermal transfer label printers
- Procure Serialized tool labels from a vendor

BAR CODE HARDWARE REQUIREMENTS (cont)

- BAR CODE SCANNING:

- Two types of input devices:

Digital Wand (pen)
Helium Neon Laser Scanner

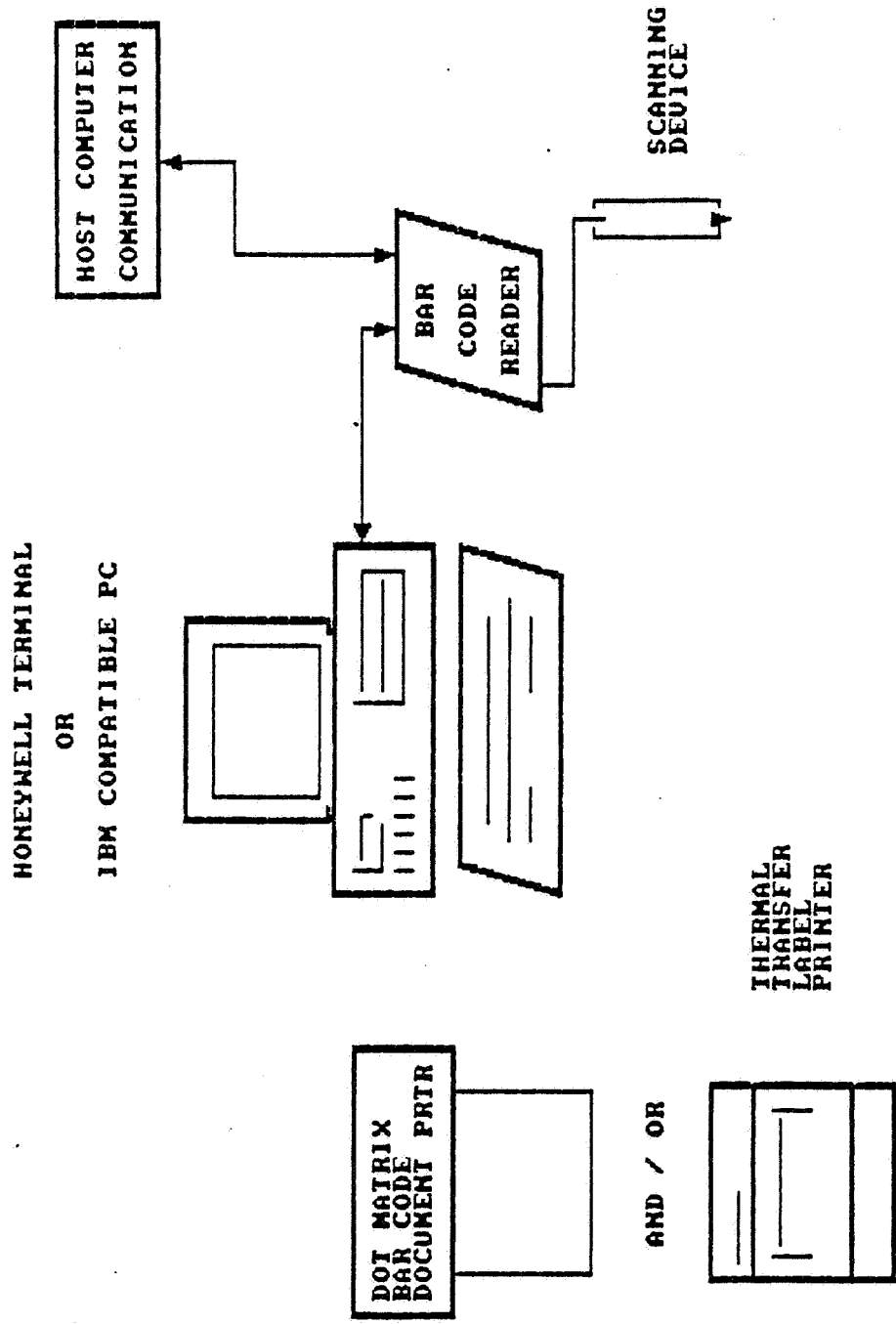
- Two types of environment:

Fixed Workstation (non-portable)
Portable

BAR CODE HARDWARE REQUIREMENTS (cont)

- *FIXED WORKSTATION (Non-Portable) ENVIRONMENT:*

- Honeywell terminal or IBM Compatible PC
- Three Non-Portable bar code hardware configurations
- Replace keystroke entry with bar code scanning
- Data sources that will be scanned



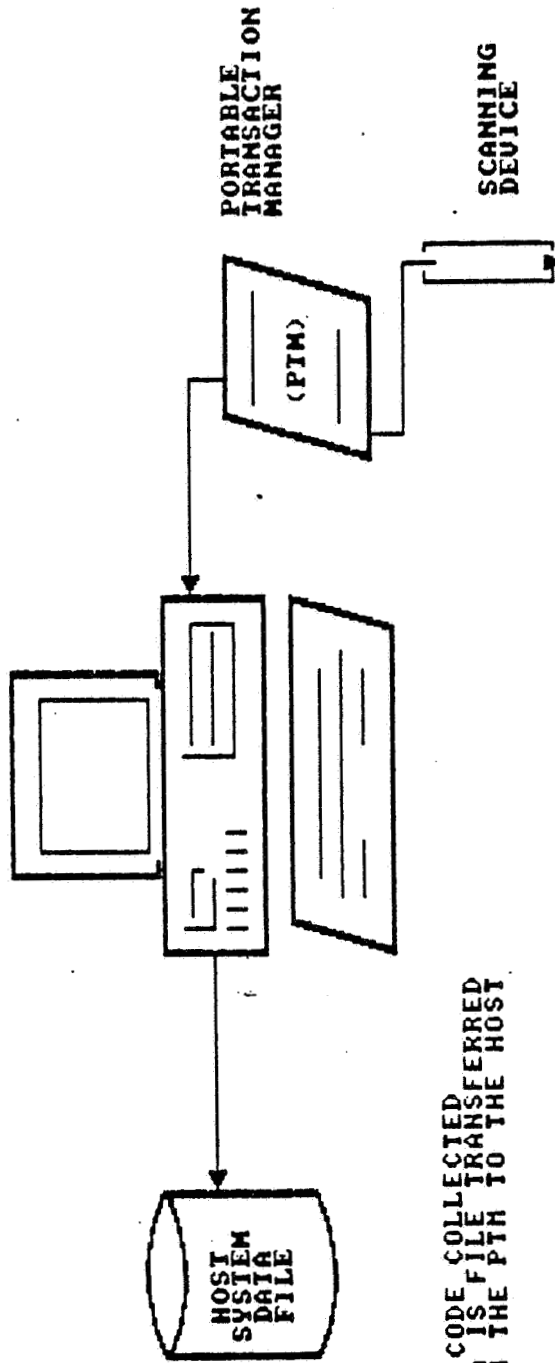
FIXED WORKSTATION

BAR CODE HARDWARE REQUIREMENTS (cont)

- BAR CODE DATA COLLECTION (Portable) ENVIRONMENT:

- Two Portable (programmable Portable Transaction Manager (PTM)) configurations
- Applications programs for the PTM
- Data sources that will be scanned
- Portable data collection PC environment

IBM COMPATIBLE PC



PORTABLE

BAR CODE HARDWARE REQUIREMENTS BY CONFIGURATION

<u>CONFIGURATION:</u>	<u>QUANTITY</u>
Non-Portable with a Digital Wand	111
Non-Portable with a Scanner	43
Magnetic Stripe/Bar Code with a Digital Wand	21
Portable with a Digital Wand	35
Portable with a Scanner	50
<u>PRINTERS:</u>	
Document Printers	107
Thermal Transfer Label Printers	7

BAR CODE HARDWARE COST

<u>YEAR</u>	<u>COST</u>
1990	\$206,000.
1991	420,000.
1992	73,000.

TOTAL:	\$699,000.

SOFTWARE DEVELOPMENT

- All software development by KIMS Development Group
- Three categories of software development required:
 - Mainframe software
 - PC environment
 - PTM applications software

KIMS BAR CODING PROJECT

<u>FUNCTION</u>	<u>HOURS</u>
BENCH STOCK	330
TOOLS/GARMENTS	140
INVENTORY	230
RECEIVING	1350
WAREHOUSE OPERATIONS	165
MOD KITS	165
CONTAINERS	165
CATALOGS	165
TRANSPORTATION	265
PROCUREMENT	230

1

NASA SUPPLY MANAGEMENT SYSTEM (NSMS)

Survey results on the
Integration of Bar
Code Technology

Pat Wayne
Marshall Space Flight Center

AREAS TO BE COVERED

- Committee makeup
- Adaptability to Bar Code Technology
- Priorities and sequence of implementation
- Equipment Specifications
- Conclusion and recommendations

NSMS BAR CODE SURVEY

COMMITTEE MAKEUP

Ames Research Center

Goddard Space Flight Center

Marshall Space Flight Center

Boeing Computer Support Services

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NSMS Bar Code Survey

ADAPTABILITY

CRITERIA

- Need for accuracy and reliability
- Need for increased data entry speed
- Data is repetitive
- Functions are standardized
- No extreme environmental conditions exist

NSMS BAR CODE SURVEY

FUNCTIONS IDENTIFIED FOR STUDY

- Receiving
- Warehousing
- Inventory counting
- Issuing

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NSMS BAR CODE SURVEY

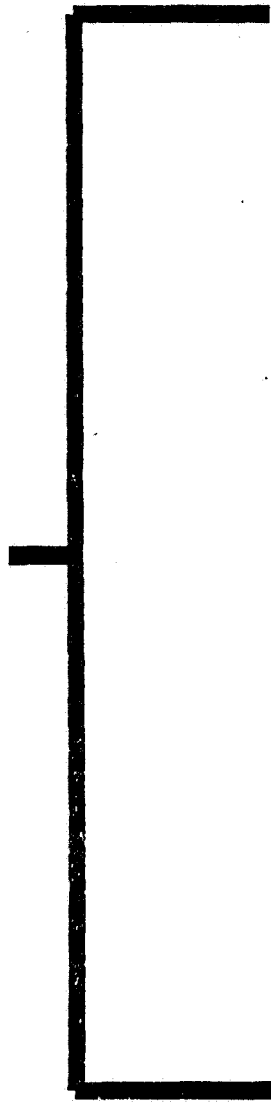
PRIORITIES

IMPLEMENTATION ORDER

INSTALLATION	REC	ISS	WHSE	INV
AMRC	2	4	3	1
ADRC	3	4	2	1
GSFC	1	2	4	3
JPL	1	2	3	4
JSC	1	2	3	4
KSC	1	3	4	2
LARC	1	4	3	2
LERC	1	2	3	4
MSFC	2	3	4	1
SSC	2	1	3	4
<u>WSTF</u>	4	1	3	2
TOTAL	19	28	35	28

NSMS BAR CODE SURVEY

DELIVERY TO INSTALLATION



DIRECT ISSUE
TO CUSTOMER

WAREHOUSE

INVENTORY COUNT

ISSUE

EQUIPMENT SPECIFICATIONS

- GSFC MAY BE USED FOR FURTHER DEFINITION OF BASELINE REQUIREMENTS.
- INVESTIGATIONS ON EACH INSTALLATION'S PHYSICAL LAYOUT IS NEEDED BEFORE ANY SPECIFIC RECOMMENDATIONS ARE MADE.
- BAR CODING EQUIP. MUST BE COMPATIBLE WITH CODE 39. THIS IS THE AGENCY STANDARD AS DEFINED BY THE AIM PROJECT OFFICE.

NSMS BAR CODE SURVEY

CONCLUSIONS

- ALL FUNCTIONS ARE CANDIDATES
- DETAILED ANALYSIS NEEDED FOR DETAILED DESIGN SPECIFICATIONS
- TIME PHASED INTEGRATION
- ORDER OF INTEGRATION
 - (1)RECEIVING
 - (2)WAREHOUSING/INVENTORY COUNTS
 - (3)ISSUING

NSMS BAR CODE SURVEY

RECOMMENDATIONS

- DEVELOP AN OVERALL PLAN FOR TIME PHASING THE IMPLEMENTATION OF BAR CODE TECHNOLOGY INTO THE NSMS FOR THE FOUR FUNCTIONAL AREAS SURVEYED.
- PROVIDE FOR ADDITIONAL CONSULTING SERVICES TO INDEPENDENTLY DEVELOP DETAILED PLANS AND SPECIFICATIONS FOR BOTH SOFTWARE AND HARDWARE.

NSMS BAR CODE SURVEY

RECOMMENDATIONS/CONT

- PROCEED WITH A TIME-PHASE DEVELOPMENT OF A COMPREHENSIVE BAR CODING SYSTEM BASED ON THOSE DETAILED PLANS AND SPECIFICATIONS.
- SELECT STANDARD BAR CODE PRINTING DEVICES TO BE PURCHASED FOR THE NSMS APPLICATIONS.

NSMS BAR CODE SURVEY

WHAT'S NEXT???

THIS SURVEY WILL BE TURNED
OVER TO THE NSMS CCB TO
IMPLEMENT ANY OR ALL
RECOMMENDATIONS THEY FEEL
NECESSARY.

ORBITER SPARES QUANTIFICATION

R. GREESON

M. GROH-HAMMOND

OUTLINE

1. Probability of Sufficiency (POS) Equation
2. Assumptions of POS
3. Alternative Methods
4. Conclusions

Probability of Sufficiency Equation

$$POS = e^{-\lambda T} \sum_{N=0}^S \frac{(\lambda T)^N}{N!}$$

POS = PROBABILITY OF HAVING A SPARE AVAILABLE

S = NUMBER OF SPARES, ON HAND (SOH) & DUE IN (SDI)

T = REPAIR TURNAROUND TIME

λ = REMOVAL RATE PER DAY

POS EQUATION

$$\lambda = \text{MDR} * \text{TPOT}$$

MDR = MAINTENANCE DEMAND RATE

$$\text{MDR} = \frac{\text{TOTAL NUMBER OF FAILURES}}{\text{TOTAL OP HOURS}}$$

TPOT = TOTAL POWER ON TIME

$$\text{TPOT} = \text{QPV} * (((\text{FPOT} + \text{GPOT}) * \text{FLTS/YR}) + (\text{LPOT} * 12 \text{ MO / YR}))$$

QPV = QUANTITY PER VEHICLE

FPOT = FLIGHT POWER ON TIME

GPOT = GROUND POWER ON TIME

LPOT = LABORATORY POWER ON TIME

ASSUMPTIONS

1. The failures of a part are a function of time.
2. Failures are random in time and independent of each other.
3. The time between failures for a part follow an exponential probability distribution.
4. The operating hours of a part are uniform over a time interval.
5. The repair turnaround time for a part is constant.
6. The maintenance demand rate is accurate for the part.

ASSUMPTION 1

Individual failures were assumed to be a function of time or operating hours.

A review of the failure history showed that there are two categories of failures

- Time dependent
- Cycle dependent

Time dependent

- Failures are directly related to operating hours
- More failures will occur as more hours are accumulated
- Example - Multiplexer / demultiplexer (MDM)

ASSUMPTION 1

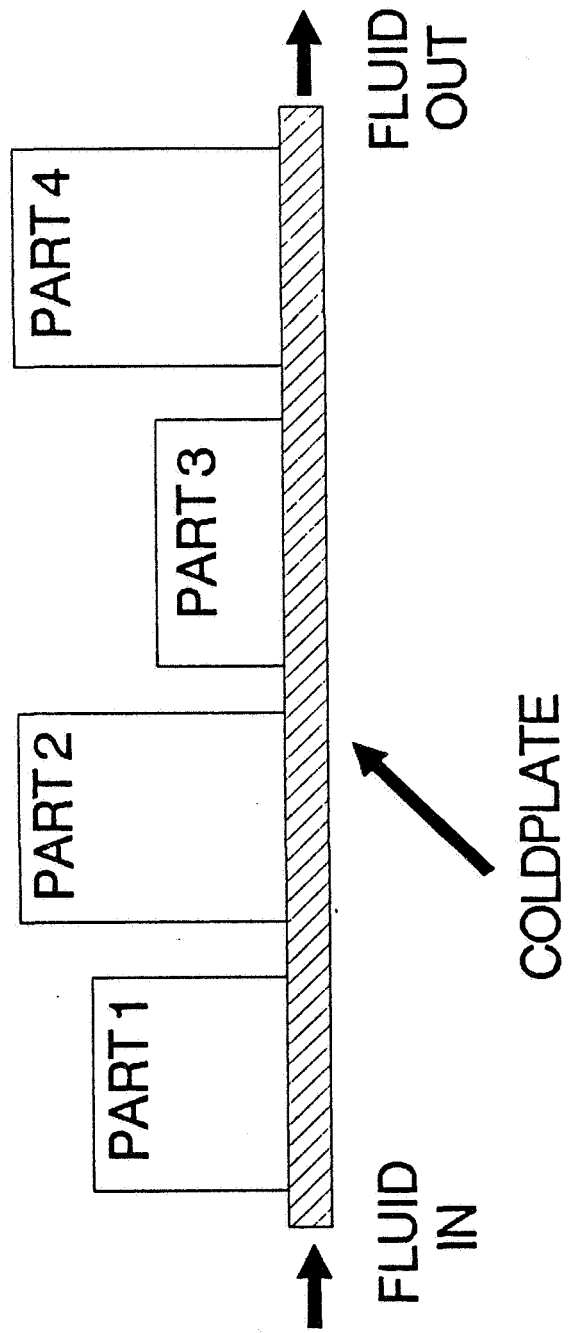
Cycle dependent

Failures are directly related to a cycle

Cycles can be the mission, part of the mission, or an external factor

Example - Coldplate

Violation of first assumption



ASSUMPTION 1

Time dependent failures

$$\lambda = \text{MDR} * \text{TPOT}$$

Cycle dependent failures

$$\lambda = \text{CMDR} * (\text{predicted number of cycles / day})$$

$$\text{CMDR} = \frac{\text{total number of failures of an LRU}}{\text{total number of cycles experienced in the past}}$$

ASSUMPTION 2

Failures were assumed to be random in time and independent of each other.

A specific action would cause only one part to fail regardless of the quantity per vehicle (qpv).

Review of when the failures occurred

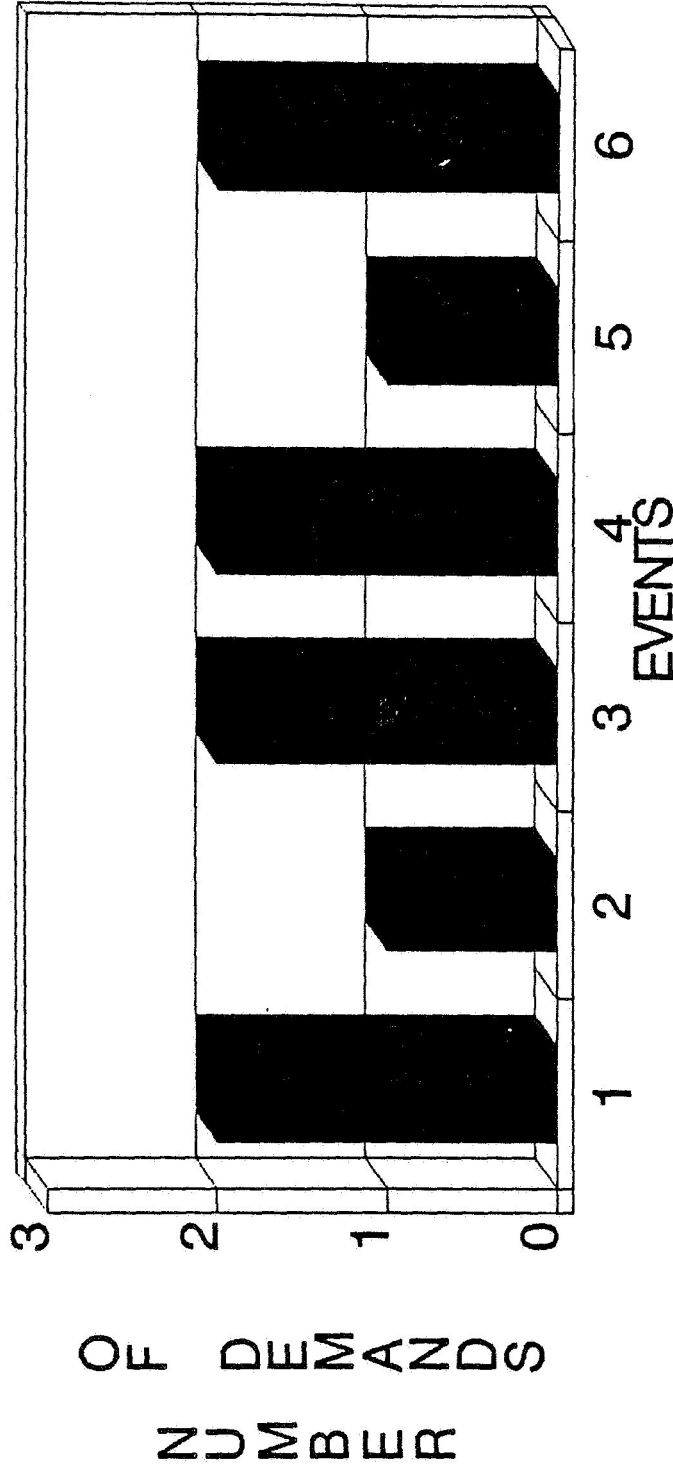
- For FA MDM no multiple failures found
- For the water spray boiler multiple failures found

New method developed for multiple failures

ASSUMPTION 2

MULTIPLE FAILURES

Example - A part ($qpv = 2$) has ten failures in which four times one event caused two failures (demands) and two times one event caused a single failure (demand)



- Old method considers this ten separate events.
- New method considers this six separate events with four multiple demands.

ASSUMPTION 2

POS TABLE

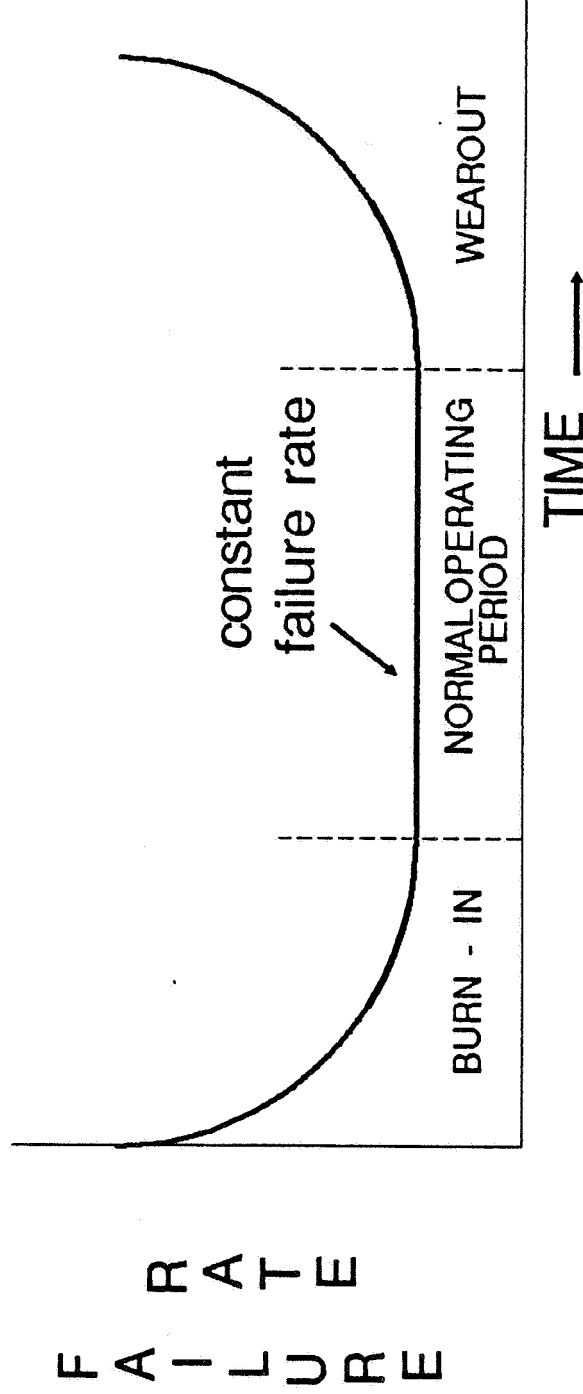
<u>OLD METHOD</u>		<u>NEW METHOD</u>	
NUMBER OF SPARES	POS	NUMBER OF SPARES	POS
0	34.9%	0	53.2%
1	71.7%	1	64.4%
2	91.0%	2	88.0%
3	97.8%	3	92.7%

ASSUMPTION 3

The time between failures for a part follow an exponential probability distribution.

- For this to be valid, the part must be operating in the normal operating phase of the life characteristics curve.

TYPICAL LIFE CHARACTERISTIC CURVE

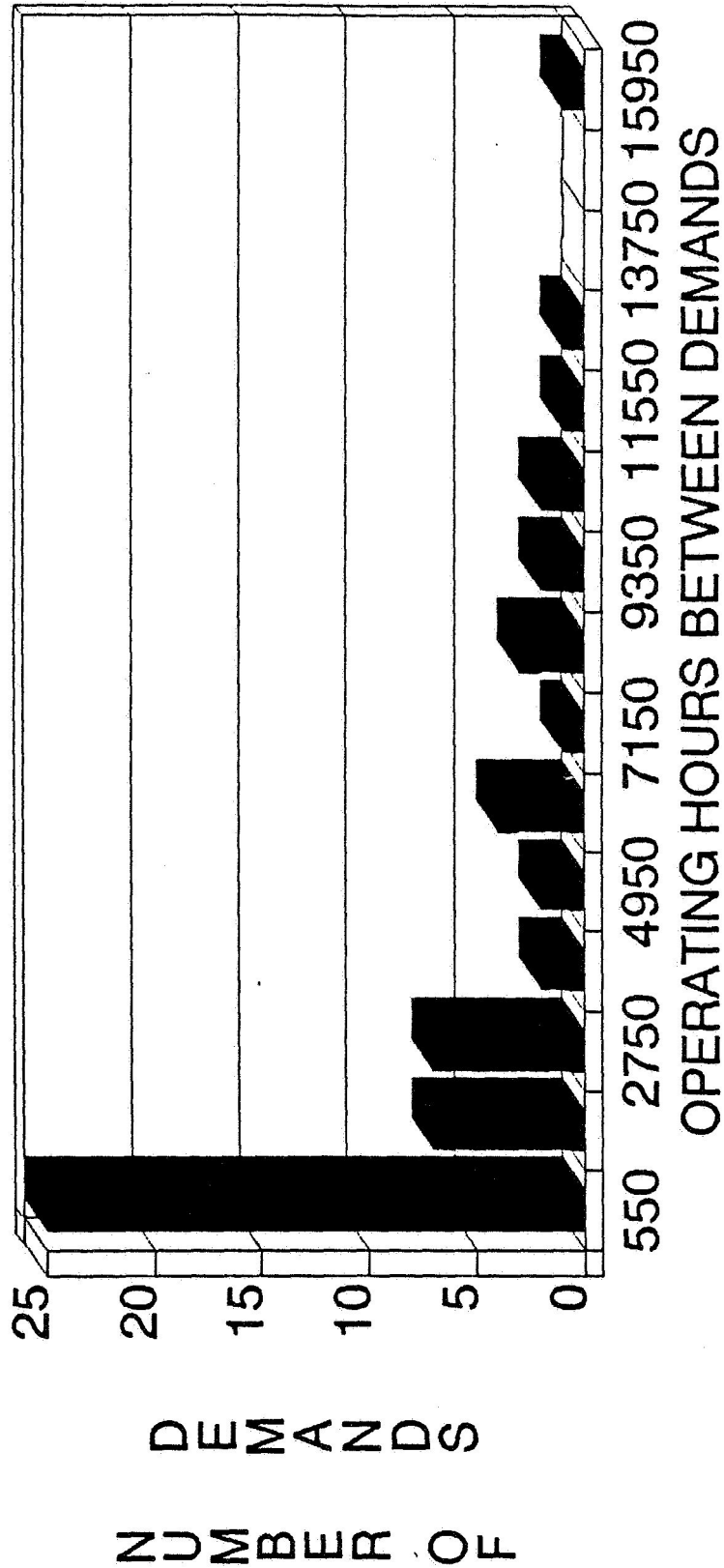


- No parts were found with increasing or decreasing failure rates

ASSUMPTION 3

- After verification of normal operating period, goodness-of-fit test must be performed to determine distribution of time between demands

MDM MC615-0004-XXXX



- To date no part found that violates this assumption

ASSUMPTION 4

The operating hours of a part are uniform over a time interval.

Operating hours have not been uniform in the past

STS - 23 990 GPOT

STS - 24 2532 GPOT

Numerous factors influence operating hours

- unanticipated retesting of the part
- additional requirements being imposed on the part from one flow to another flow
- weather

ASSUMPTION 4

- Projected operating hours obtained from Mission Planning

14 flts / yr 1693 avg gpot per flow

- Historical data shows violation of this assumption
- Once a mature flight rate is reached, estimate based on data from Mission Planning will be sufficient.

ASSUMPTION 5

The repair turnaround time (RTAT) for a part is constant.

- Engineering estimate of RTAT used in the past
- Review of actual repair history

Variable RTAT's

RTAT's dependent on various factors

- type of failure
- workload at repair facility
- capacity of repair facility

ASSUMPTION 5

Actual RTAT's for the S-Band Transponder are:

RTAT's (days)

72
147
18
17
21
124

Engineering estimate = 120 days

Actual average = 67 days

Spares	POS	
	(120 days)	(67 days)
1	54.0%	78.4%
2	79.5%	94.2%
3	92.7%	98.8%

Projected RTAT's should be based on actual RTAT's.

ASSUMPTION 6

The maintenance demand rate (MDR) is accurate for the part.

MDR was based on engineering estimate rather than actual data

Sufficient data is now available to determine an actual MDR.

$$\text{Actual MDR} = \frac{\text{actual number of failures}}{\text{actual number of op hrs experienced in the past}}$$

	<u>EMDR</u>	<u>AMDR</u>
FF MDM	0.645	0.066

Actual MDR is a more accurate representation of the true failure rate.

ASSUMPTION 6

No consideration was given to cycle type failures.

Modifications must be taken into account.

Working environment of the part must be considered.

Display Driver Unit (DDU)

	<u>Number of failures</u>	<u>Total Op Hrs</u>	<u>MDR</u>
KSC (orbiters)	14	13,500	1.037
Laboratory	12	95,000	0.126
Combined	26	108,500	0.240

ASSUMPTION 6

The part has two distinct MDR's and both must be used in the spares quantification.

Lambda (λ) is adjusted in the POS equation.

$$\lambda = QPV * (OMDR * ((FPOT + GPOT) * FLTS / YR) + (LMDR * (LPOT * 12 MO / YR)))$$

POS ASSUMPTIONS SUMMARY

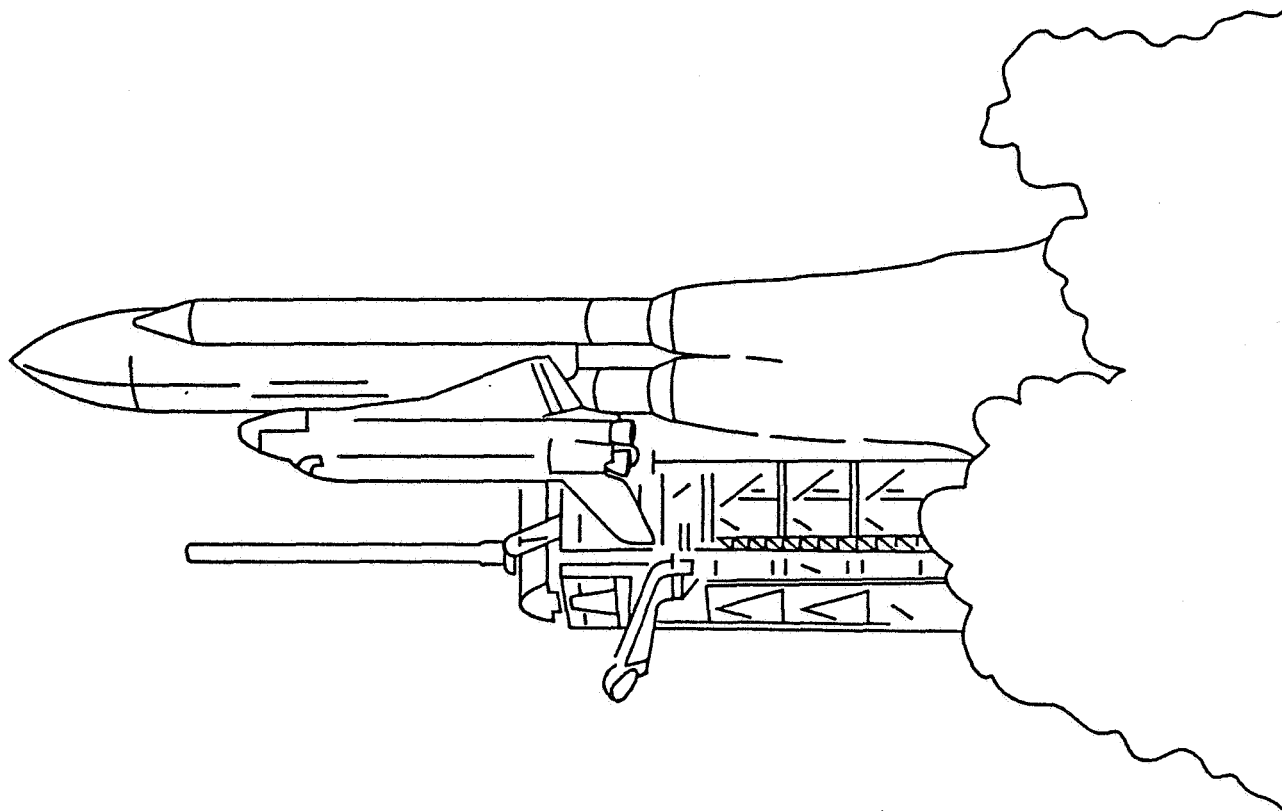
ASSUMPTION

FINDINGS

1. Time dependent failures	Two categories of failures
2. Random independent failures	Multiple failures
3. Exponential probability distribution	Normal operating phase Goodness-of-fit test
4. Uniform operating hours	Variable operating hours Estimate from Mission Planning
5. Constant RTAT	Variable RTAT's Actual RTAT's for projected RTAT's
6. Accurate MDR	Actual data with consideration for modifications and environment

CONCLUSION

- Parts are unique and have unique characteristics.
- Spares quantification is a dynamic process
- One method of spares quantification is not appropriate for every part.
- Additional methods must continue to be developed.



INITIATIVES TO INCREASE
INVENTORY ACCURACY

J.D. HERRING, MANAGER
LOGISTICS ENGINEERING

 **Lockheed**
Space Operations Company

OVERVIEW

- o INTRODUCTION
- o CASE STUDY
 - OBJECTIVE
 - BACKGROUND
 - SPC ACTIONS TO ENHANCE INVENTORY ACCURACY
 - SUMMARY

INTRODUCTION

- o INVENTORY ACCURACY IS A MEASUREMENT OF THE ACCURACY OF THE RECORDS AND THE ADEQUACY OF THE INVENTORY CONTROL SYSTEM
- o MEASURED BY PHYSICALLY COUNTING ALL ITEMS IN THE INVENTORY (BY STATISTICAL SAMPLING OR 100% COUNT) AND COMPARING THE COUNTED QUANTITY TO THE RECORD BALANCE - EXPRESSED AS A PERCENTAGE

WHAT IS SUFFICIENT ACCURACY?

- o MINIMUM ACCEPTABLE VALUE (MAY) ESTABLISHED BY CONTRACT OR POLICY

FOR EXAMPLE

- o NHB 4100.1B ESTABLISHES SAMPLING METHODOLOGY TO PROVIDE "95% CONFIDENCE THAT 85% OF THE RECORDS ARE WITHIN THE ACCEPTABLE ERROR LIMITS"
- o ERROR DEFINED AS RECORD TO COUNT QUANTITY DISCREPANCY OF TEN PERCENT OR MORE OR A DOLLAR VARIANCE OF TEN PERCENT OR MORE OF EXTENDED VALUE

WHAT IS SUFFICIENT ACCURACY?

THE REAL ACCEPTANCE LEVEL LIES ABOVE THE MAY AND IS DRIVEN BY SEVERAL FACTORS:

- o DOES THE INVENTORY SUPPORT TASKS ON A MISSION OR TIME SENSITIVE CRITICAL PATH?
- o IS WILLINGNESS TO ACCEPT DELAYS DUE TO "OUT OF STOCKS" GREATER THAN WILLINGNESS TO DEVOTE ADDITIONAL RESOURCES TO INVENTORY CONTROL SYSTEMS?

PROBABLE CASE

NO WILLINGNESS TO ACCEPT "OUT OF STOCK" DELAYS AND
NO WILLINGNESS TO DEVOTE ADDITIONAL RESOURCES TO
INVENTORY CONTROL SYSTEMS

CASE STUDY

IN AUGUST 1988 THE SHUTTLE LOGISTICS PROJECT OFFICE ASKED THE SHUTTLE PROCESSING CONTRACTOR TO REVIEW ITS INVENTORY CONTROL SYSTEMS FOR FLIGHT HARDWARE AND CONSIDER INSTITUTING A DOUBLE SAMPLING TECHNIQUE FOR RECORD TO COUNT VERIFICATION WITH A MUCH MORE STRINGENT MAY THAN WAS CURRENTLY IMPOSED

OBJECTIVE

ENHANCE INVENTORY ACCURACY BY:

- o WAREHOUSE PROCEDURAL IMPROVEMENTS
- o INCREASED EMPHASIS ON TRAINING
- o SYSTEM (KIMS) IMPROVEMENTS
- o MORE EXTENSIVE PHYSICAL INVENTORY

BACKGROUND

- o SPC INVENTORY AND RESULTANT ACCURACY BASED ON GOVERNMENT PROVIDED SYSTEM/CRITERIA
- o INVENTORY ACCURACY CRITERIA ESTABLISHED IN NHB 4100.1A AND TRANSLATED INTO KIMS LOGIC AND PROGRAMMING
- o ESTABLISHES A 95% CONFIDENCE LEVEL THROUGH STATISTICAL SAMPLING THAT 85% OF THE RECORDS ARE WITHIN THE ACCEPTABLE ERROR LIMITS
- o NHB 4100.1A ERROR LIMITS:
 - ERROR: RECORD TO COUNT QUANTITY DISCREPANCY OF TEN PERCENT OR MORE OR A DOLLAR VARIANCE OF TEN PERCENT OR MORE OF EXTENDED VALUE
 - VARIANCE: RECORD TO COUNT QUANTITY DISCREPANCY OF LESS THAN TEN PERCENT OR A DOLLAR VARIANCE OF LESS THAN TEN PERCENT OF EXTENDED VALUE. NOT INCLUDED IN ACCURACY CALCULATIONS

SPC APPROACH TO INCREASE INVENTORY ACCURACY

- o INVENTORY ACCURACY RESULTS FROM OPERATING ENVIRONMENT
 - INVENTORY MANAGEMENT SYSTEM FUNCTIONALITIES
 - PERSONNEL TRAINING
 - OPERATING PROCEDURES
 - DISCIPLINE
- o PHYSICAL INVENTORIES PROVIDE SUPPORTING ROLE
 - CONFIRMATION OF SYSTEM PERFORMANCE
 - RECONCILIATION
 - MANAGEMENT VISIBILITY AND FEEDBACK
- o CRITERIA CHANGES (ACCURACY GOALS) REQUIRE CORRESPONDING ADJUSTMENTS TO OPERATING ENVIRONMENT
 - ADDITIONAL RESOURCES
 - LEAD TIME TO IMPLEMENT
- o CURRENT ACTIONS DIRECTED AT IMPROVING OVERALL SYSTEM
 - WITHIN EXISTING RESOURCES
 - MINIMUM IMPACT TO OPERATIONAL SUPPORT

SPC ACTIONS TO ENHANCE INVENTORY ACCURACY

<u>ACTIONS TAKEN</u>	<u>SUPPLY SUPPORT</u>	<u>INVENTORY MANAGEMENT</u>	<u>TECHNICAL TRAINING</u>	<u>DATE INITIATED</u>
1. MANAGEMENT ACTION PLANS	X	X		AUGUST '88
2. USE OF PRE-INVENTORY LOCATION SURVEY (PILS)	X			JULY '88
3. WAREHOUSE REFUSALS				
AUTHORIZATION LEVELS ESTABLISHED	X			AUGUST '88
GOAL SETTING	X			NOVEMBER '88
FEEDBACK TO SUPPLY SPT AFTER ANALYSIS		X		NOVEMBER '88
4. IMPROVED KIMS TRAINING	X	X	X	DECEMBER '88
5. ESTABLISH KIMS TRAINING/TEST DATA BASE FOR HANDS-ON SESSIONS	X	X	X	MARCH '89
6. SAMPLE LOT ANALYSIS AND FEEDBACK TO SUPPLY SPT		X		APRIL '88
7. REVISE PROCEDURES	X	X	X	NOVEMBER '88
8. KIMS ENHANCEMENTS	X	X		NOVEMBER '88
9. ELIMINATE KIMS "LOST MESSAGES"	X	X		NOVEMBER '88

STORAGE LOCATION ENHANCEMENTS

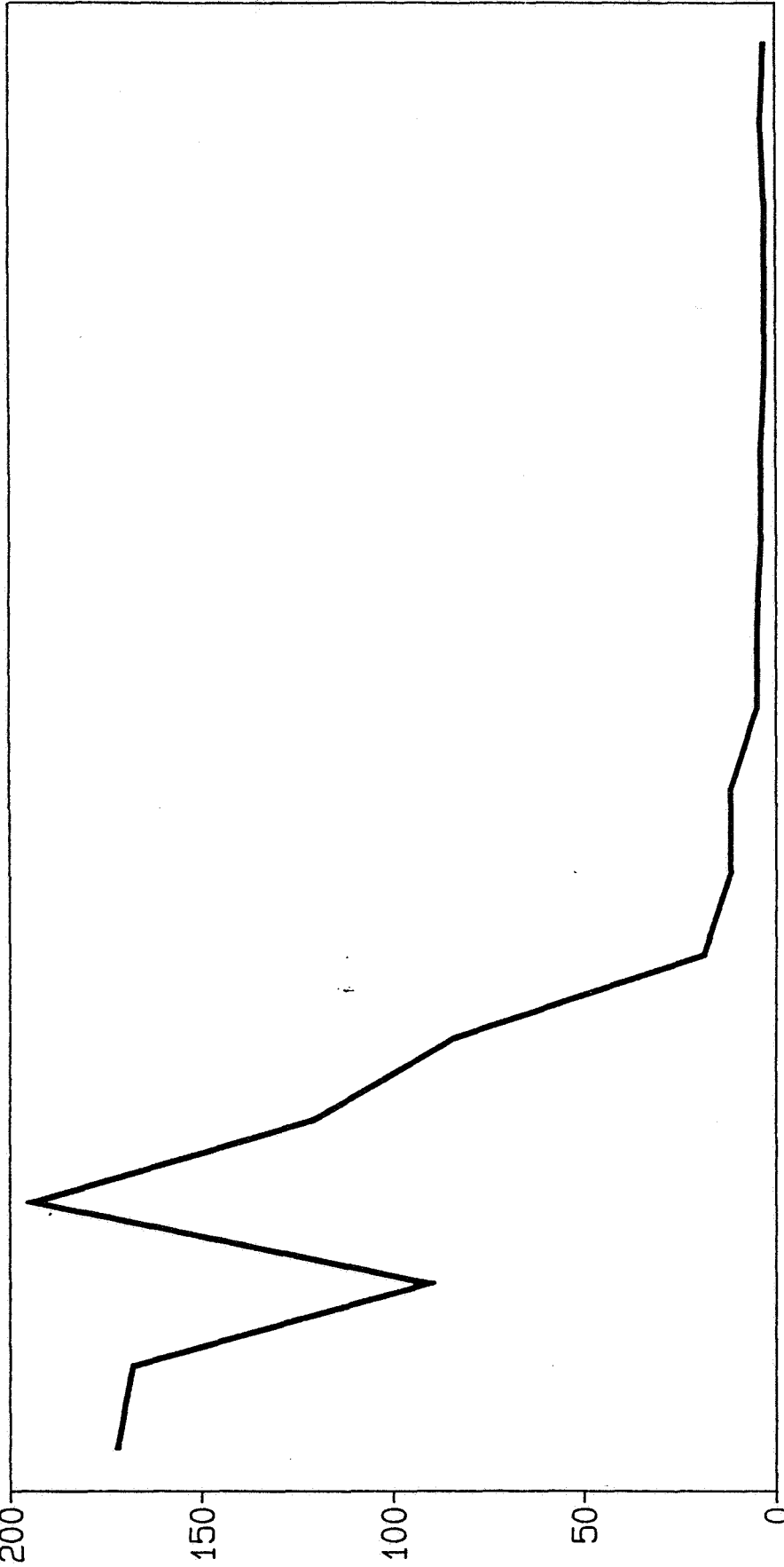
- o CONDUCTING PRE INVENTORY LOCATION SURVEY (PILS) FOR ALL WAREHOUSE LOCATIONS
 - ALL FLIGHT SPARE LOCATIONS VERIFIED IN 1988
 - MAIN WAREHOUSE NOW IN PROGRESS
- o IMPROVING IDENTIFICATION OF MATERIAL AND PALLET STORAGE LOCATION
 - ATTACHING PILS CARD TO MATERIAL
 - CONTAINS NSN, ITEM NAME, UNIT OF ISSUE, LOCATION
 - CONSIDERING USE OF MAGNETIC CARD HOLDERS
- o IMPROVED RELIABILITY OF RETURNING PALLET TO PROPER LOCATION
 - TAB CARDS WITH LOCATION ARE BEING ATTACHED AS PALLET IS HANDLED AND DURING PILS
 - LOCATION APPLIED TO PALLETS AS NEW RECEIPTS ARE PROCESSED

WAREHOUSE REFUSALS

- o REVISED ISSUE PROCEDURES TO REQUIRE MANAGEMENT REVIEW OF WAREHOUSE REFUSALS
- o USE WAREHOUSE REFUSAL CHECK LIST FOR REVIEW AND APPROVAL
- o DRAMATIC DECREASE
 - 194 IN SEPT 1988
 - 12 IN JAN AND FEB 1989
 - 3 IN NOV 1989
- o FEEDBACK ON CHARTS TO INCREASE EMPLOYEE AWARENESS
- o CAUSE AND EFFECT ARE DISCUSSED IN DAILY CREW MEETINGS

WAREHOUSE REFUSALS

NUMBER OF W/H REFUSALS



FY-88

FY-89

FY-90

ORIGINAL GOAL = 27
NOW REVISED TO "0"

IMPROVING TRAINING

- o INTENSIFIED SUPPLY SUPPORT OUT SINCE JULY '88
- o RECEIVING FLOW REVIEWED TO IDENTIFY WEAKNESSES
 - COMPLETED RECEIVING DOCUMENTS
 - MESSAGE MATCH
 - KIMS SUSPENSE LISTING
 - RECEIVING RECORDS
 - CLOSE OUT PROCESS
- o PROVIDE FEEDBACK TO CORRECT DEFICIENCIES
 - INDIVIDUAL "SPOT" TRAINING
 - GROUP TRAINING FOR BROADER DEFICIENCIES
- o PREPARED AND PRESENTED KIMS RECEIVING TRAINING COURSE
 - CLASSROOM OVERVIEW
 - INDIVIDUAL, HANDS-ON TERMINAL TRAINING
 - ADDITIONAL KIMS COURSES TO BE DEVELOPED

REVISED APPLICABLE OPERATING PROCEDURES

<u>PROCEDURE #</u>	<u>PROCEDURE</u>	<u>DATE REVISED</u>
4030-114	RECEIPT AND ISSUE OF FLIGHT MATERIAL	DECEMBER '88
4030-122	ISSUE AND DELIVERY OF MATERIAL	MARCH '89
4040-214	PHYSICAL INVENTORY OF MATERIAL STOCKS	FEBRUARY '89
4040-215	INVENTORY ADJUSTMENTS	NOVEMBER '88

KIMS ESRs TO IMPROVE INVENTORY ACCURACY

<u>ESR #</u>	<u>ESR TITLE</u>	<u>DATE</u>
86027.0781	LOCATION CHANGE	11/16/88
86027.0784	884 SUSPENSE EDITS	11/22/88
86027.0782	BIN LABELS	12/05/88
86027.0778	LOCATION ASSIGNMENT	12/12/88
86027.0798	REPORT ADJUSTMENT	12/16/88
86027.0825	POST-POST TURN-IN LOCATION	01/24/89

"LOST" KIMS MESSAGES

- o IMPACT: KIMS INVENTORY RECORD REDUCTIONS WITH NO MATERIAL MOVEMENT
- o INVESTIGATED CAUSES FOR LOST MESSAGES
 - IMPROPER TERMINAL LOG-ON/LOG-OFF
 - PAPER JAMS IN PRINTERS
 - UNSCHEDULED KIMS DOWNTIME
 - RUNNING OUT OF PAPER
 - PRINTER GOES DOWN WITHOUT VISIBLE/AUDIBLE WARNING, INDICATES STILL ON LINE
 - NO ACKNOWLEDGEMENT OF MESSAGE RECEIPT BY PRINTER
- o IMPLEMENTED NEW ROP LOG-ON PROCEDURE TO ENSURE ROP IS OPERATIONAL
- o PROVIDED METHOD FOR OFF-SHIFTS TO RECALL KIMS MESSAGES

ENHANCED PHYSICAL INVENTORY

o CURRENT PROCESS BASED ON KIMS SAMPLING PROGRAM

- NHB CRITERIA
- BIENNIAL CYCLE

o PROPOSED PROCESS PROVIDES 100% PHYSICAL INVENTORY OF ACTIVE FLIGHT HARDWARE

- NHB CRITERIA
- ANNUAL CYCLE
- KIMS SAMPLING FOR ALL OTHER INVENTORY ITEMS

SUMMARY

- o SPC HAS INITIATED IMPROVEMENTS IN INVENTORY ACCURACY
 - PILS
 - GOAL SETTING AND FEEDBACK
 - KIMS ENHANCEMENTS
 - KIMS TRAINING
 - PROCEDURE IMPROVEMENT
- o INVENTORY ACCURACY ON UPWARD TREND
- o RECOMMENDED PHYSICAL INVENTORY PLAN PLACES DESIRED EMPHASIS ON CRITICAL FLIGHT ITEMS WHILE NOT INCURRING MAJOR KIMS REPROGRAMMING EXPENSE OR INCREASED SPC LABOR COST

SUPPLY AND EQUIPMENT MANAGEMENT CONFERENCE PRESENTATION

PEDRO E. JIMENEZ
DECEMBER 4, 1989

C-4
280

SUPPLY AND EQUIPMENT MANAGEMENT CONFERENCE

RESEARCH AND PROGRAM MANAGEMENT OVERVIEW

- o PERSONNEL AND RELATED COST - FUND SOURCE 1
- o TRAVEL - FUND SOURCE 2
- o OPERATION OF INSTALLATION - FUND SOURCE 3

"FUND SOURCE 3"

"PROVIDES FOR A BROAD RANGE OF SERVICES, SUPPLIES AND EQUIPMENT IN SUPPORT OF THE CENTERS' INSTITUTIONAL ACTIVITIES."

THREE MAJOR SUBFUNCTION BREAKS:

- FACILITIES SERVICES
- TECHNICAL SERVICES
- MANAGEMENT AND OPERATIONS

SUPPLY AND EQUIPMENT MANAGEMENT CONFERENCE

RECENT NASA FS 3 MANAGEMENT INITIATIVES

1988

APPROPRIATION REALIGNMENT

- ENSURED PROPER ACCOUNTING OF R&PM PROGRAM AND FISCAL REQUIREMENTS
- ESTABLISHED FMM DEFINITIONS

SUMMER 1989

ESSENTIAL BASELINE STUDY

- DEVELOP GOOD UNDERSTANDING OF FS-3 FUNDING REQUIREMENTS BY FUNCTION
- CENTERS GATHERED AND DEVELOPED ESSENTIAL BASELINE NEEDS
- HEADQUARTERS TEAM VISITED ALL CENTERS
- EXTENSIVE DATABASE ESTABLISHED FOR FS 3
- MAJOR INCREASE IN FS 3 FORWARDED TO OMB

WINTER 1990

REFINE FUNCTIONAL DEFINITION INCONSISTENCIES

PREPARE FOR EXECUTING FY 1991 IMPROVEMENTS

ANTICIPATE FY 1992 REQUIREMENTS

- ESTABLISH INSTITUTIONAL RESOURCES COUNCIL OR SOME FORUM FOR IMPROVED COMMUNICATIONS

SUPPLY AND EQUIPMENT MANAGEMENT CONFERENCE

FUND SOURCE 3 PROGNOSIS

- ESTABLISHMENT OF INSTITUTIONAL RESOURCES COUNCIL
 - ADA-3
 - PROGRAM OFFICES
 - CENTER COMPTROLLERS/INSTITUTIONAL/RESOURCE MANAGERS
- PREPARE ACCURATE AND DEFENSIBLE BUDGET NARRATIVES
- DEVELOP EXECUTABLE PHASING PLAN FOR ALL FUND SOURCES
- FY 1992 REQUIREMENTS REVIEW

SUPPLY AND EQUIPMENT MANAGEMENT CONFERENCE

R&PM IOP PROCESS
FY 92 BUDGET FORMULATION

- IOP-1

- CENTERS REFINE CURRENT YEAR (FY 90) OPERATING PLAN
- HIGHLIGHT R&PM POTENTIAL PROBLEMS FOR (FY 91)
- BASIS FOR SPRING PREVIEW (FY 92)

- IOP-2

- FINAL UPDATE OF CURRENT YEAR SPENDING LEVELS (FY 90)
- REFINE BUDGET AND PROGRAM DATA FOR FY 91
- REVISE SPRING REVIEW (FY 92 REQUIREMENTS) FOR OMB
- ENSURE OMB FY 92 SUBMISSION IS ACCURATELY PORTRAYED

- IOP-3/CONGRESSIONAL

- POST FY 90 ACTUALS
- PREPARE AND EXPAND FY 91 OPERATING PLAN
- MARKUP OF OMB FY 92 CUTS
- PREPARE BACKUP TESTIMONY FOR CONGRESSIONAL HEARINGS

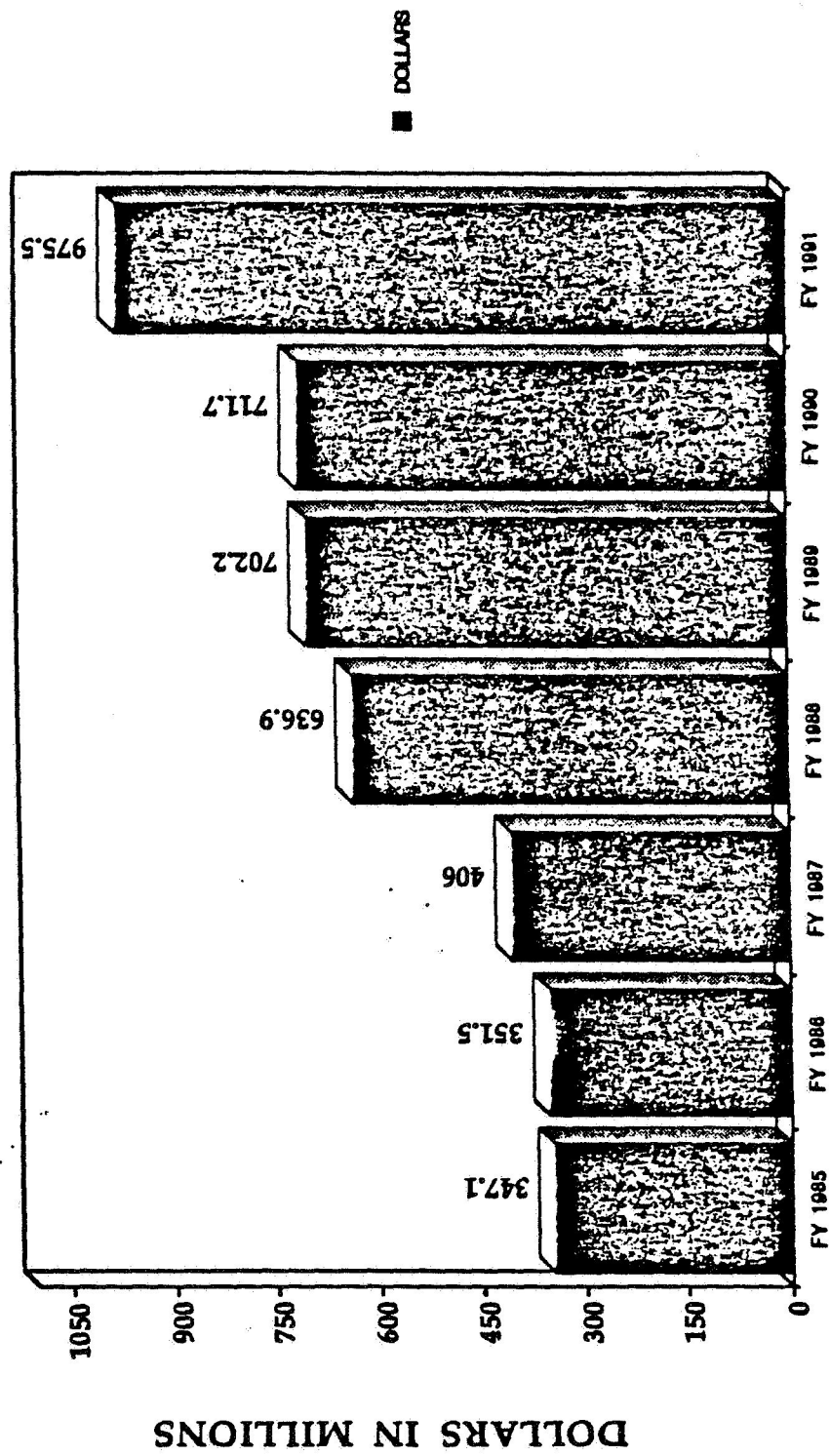
SUPPLY AND EQUIPMENT MANAGEMENT CONFERENCE

R&PM IOP PROCESS

HOW CAN YOU GET PREPARED?

- CONTACT COMPTROLLER/DIRECTOR OF ADMINISTRATION FOR GUIDELINES
- ENSURE THAT FUNCTIONS REFLECT ACCURATE BASELINE LEVELS
 - PROPER DOLLARS FOR MAINTENANCE FUNCTIONS
 - MAINTENANCE AND RELATED SERVICES
 - UTILITY SERVICES
 - ADMINISTRATION ADP
 - SHOP SUPPORT
 - TRANSPORTATION
 - COMMON SERVICES
 - CUSTODIAL SERVICES
- PROPER LEVELS OF FUNDING FOR SUPPORT SERVICE CONTRACT REQUIREMENTS
- ALIGN BUDGET FUNCTIONS WITH FMM DEFINITIONS
- ESTABLISH OBJECTIVE STANDARDS FOR EXECUTING FS 3 FUNDING
- TEAM APPROACH TO SOLVE PROBLEMS AND PUSH IMPROVEMENTS

**SUPPLY AND EQUIPMENT MGMT CONFERENCE
FUND SOURCE 3 TRENDS**



ORIGINAL PAGE IS
OF POOR QUALITY

SUPPLY AND EQUIPMENT MANAGEMENT CONFERENCE
ARE WE BUDGETING FUNCTIONS PROPERLY?

BUDGET SUBFUNCTION	SUPPLIES	EQUIPMENT
--------------------	----------	-----------

FOR EXAMPLE

FACILITY MAINTENANCE

EQUIPMENT MAINTENANCE

ADP MAINTENANCE

ADP EQUIP/LEASE/PURCHASE

PHOTO SERVICES

GRAPHICS

PRINTING AND REPO.

GEN. PURPOSE MOTOR VEH.

INTERAGENCY MOTOR POOL

AIRCRAFT OPERATIONS

ADMIN EQUIP/LEASE/PURCHASE

OFFICE FURNITURE

EQUIPMENT WORKSHOP

Equipment Management Workshop

Tuesday Dec. 5, 1989 1:00-5:00

1:00-1:15 NEMS\NMIS\NPDMS Interface

Considerations

**2:00-2:30 Report on Property Custodian
Module**

2:45-3:00 NEMS CCB Update

3:00-3:30 NEMS CCD Transfer Problems

3:30-4:00 NEMS Central Cataloging

**4:00-5:00 PSCN Gateway Equipment Control
Issues**

Equipment Management Workshop

Wednesday DEC. 6, 1989 1:00-5:00

1:00-1:30 Equipment Performance Measures

1:30-2:00 Equipment Budget Standards

2:00-2:15 Standard Report Mechanisms

**2:15-2:30 Results on Property Survey
Officer Workshop**

**2:45-3:00 Global Change Transaction
Authority Level**

**3:00-3:15 Use of Flight Manifest for
Control Purposes**

Equipment Management Workshop
Wednesday Dec. 6, 1989 1:00-5:00

**3:15-3:30 Nems Transaction Used for
Contractor Acquired Property**

3:30-4:00 Equipment Pool/Carrier Account

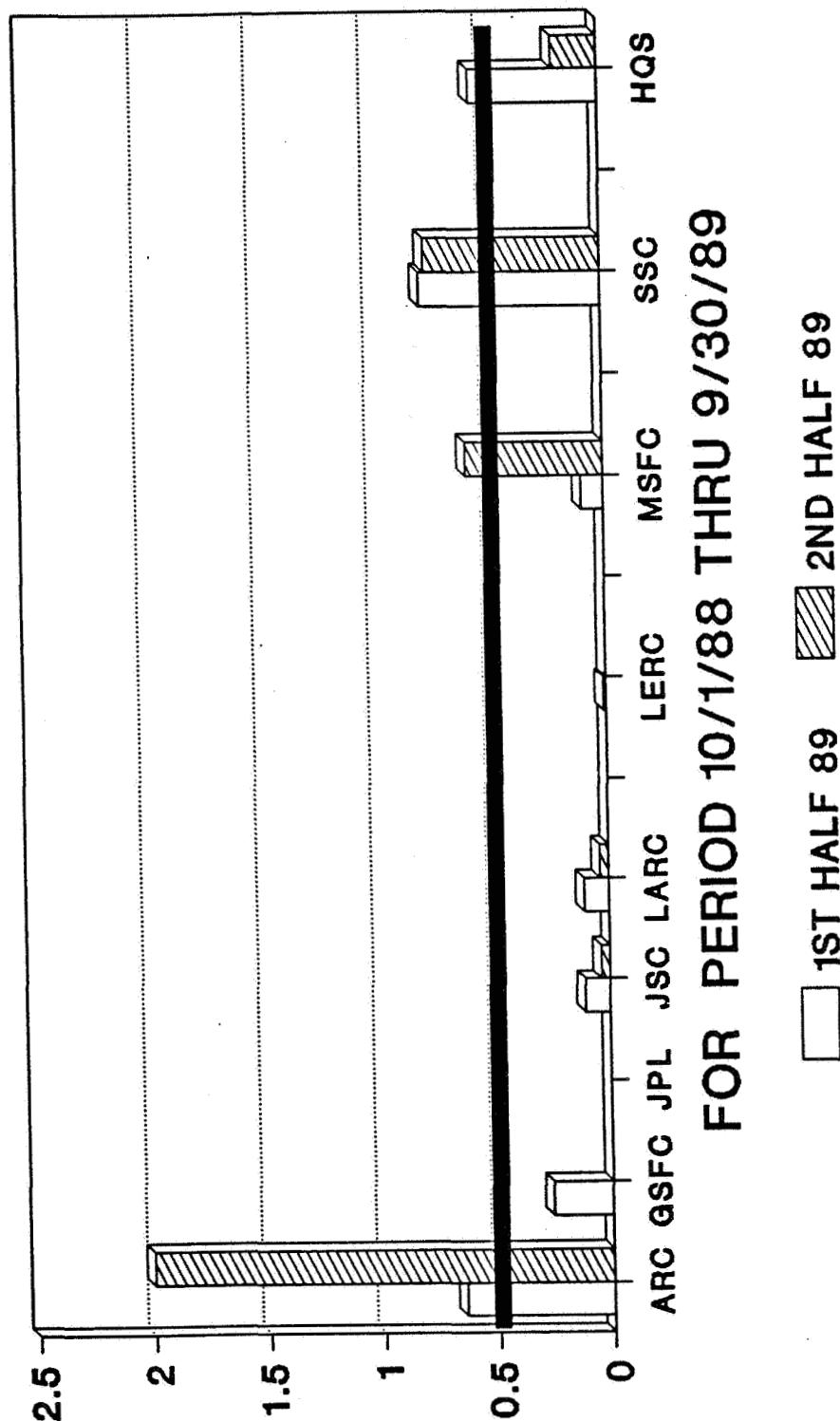
4:00-5:00 Center Innovations

Equipment Management Workshop
Thursday Dec. 7, 1989 10:15-11:30

**10:15-11:30 AMES Contract Property Custodian
Program**

Performance Measures

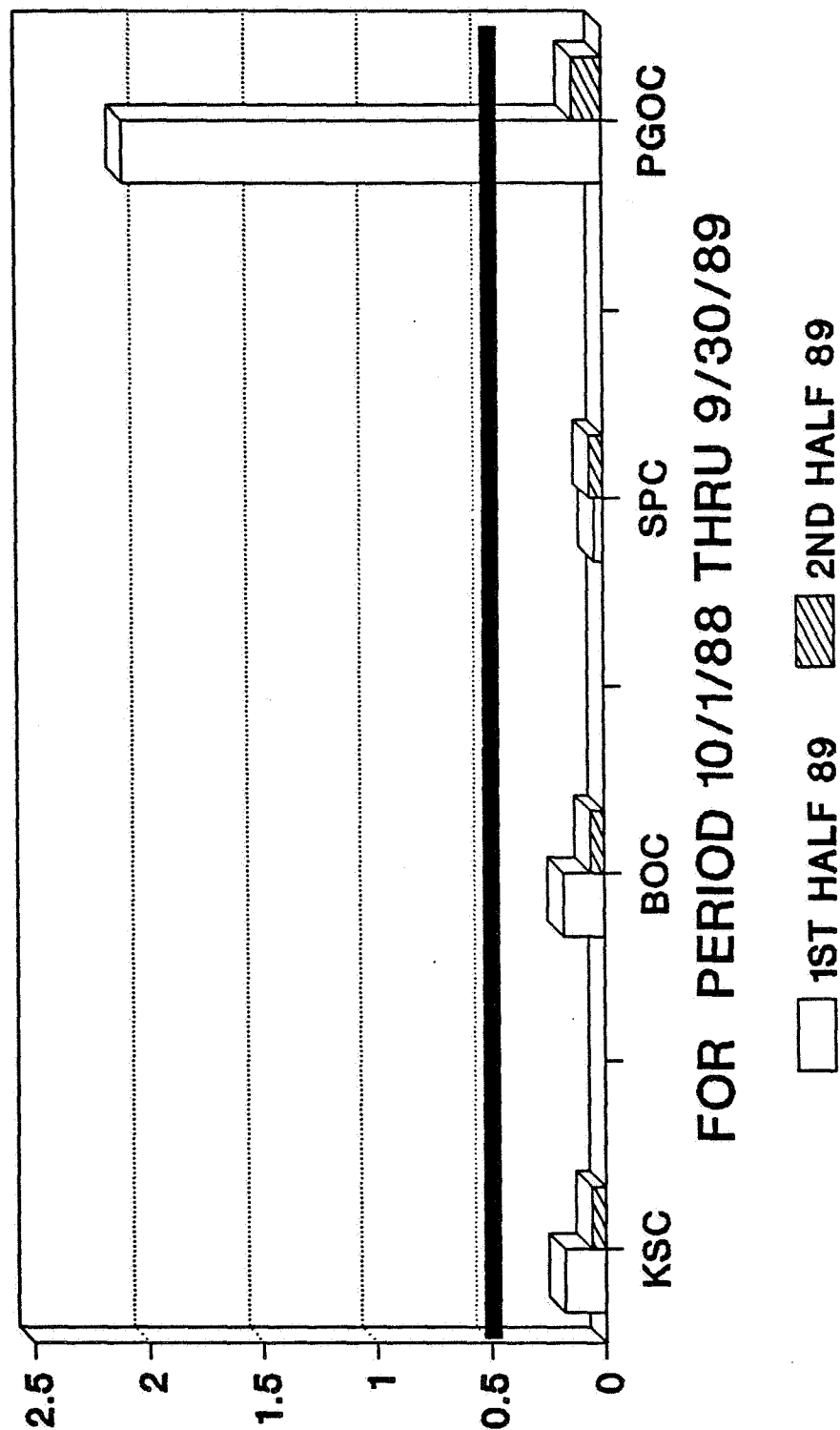
Equipment Loss Rate



NASA Standard .5%

Performance Measures

Equipment Loss Rate



PERFORMANCE MEASURES: EQUIPMENT MANAGEMENT
REPORTING PERIOD FROM _____ TO _____

1. Equipment Loss Rate

NATURE: Equipment items lost and stolen divided by equipment base expressed as a percentage.

SOURCE: NEMS and Survey Report Register.

METHOD:

A. Enter the number of records for the following DELETE transactions:

TR 71 _____

TR I71 _____

Total TRs _____

B. Enter the number of records for the following ADD transactions:

TR 19 _____

TR I19 _____

Total TRs _____

C. From the survey register, enter the number of survey reports resulting from DAMAGE only _____

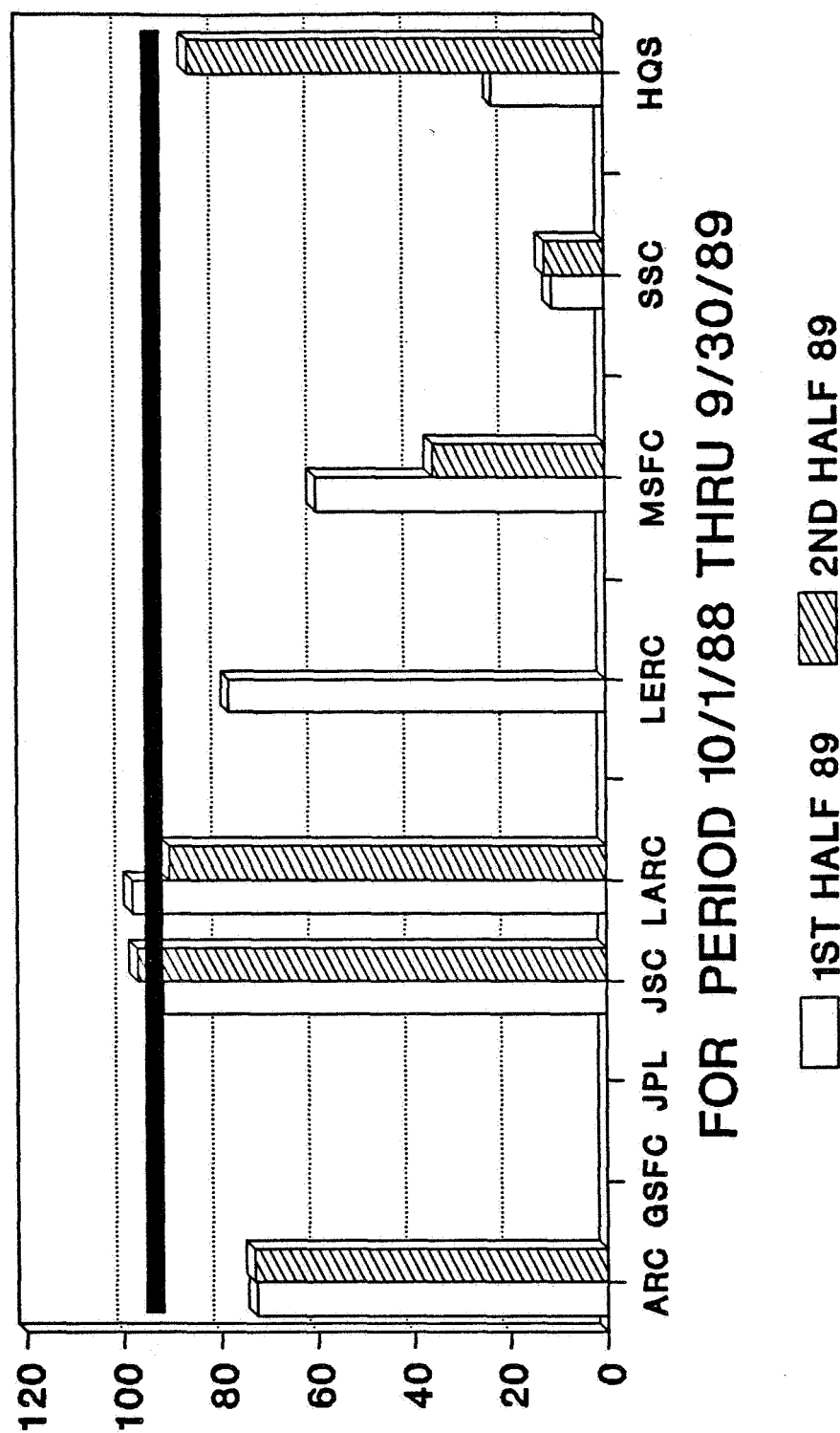
D. Add the totals on B and C, then subtract from A. Enter the result here. _____

E. Enter the total number of items in the NEMS database. _____

F. Divide D by E and multiply by 100 (D/E)x100. This is your equipment loss percentage. _____

Performance Measures

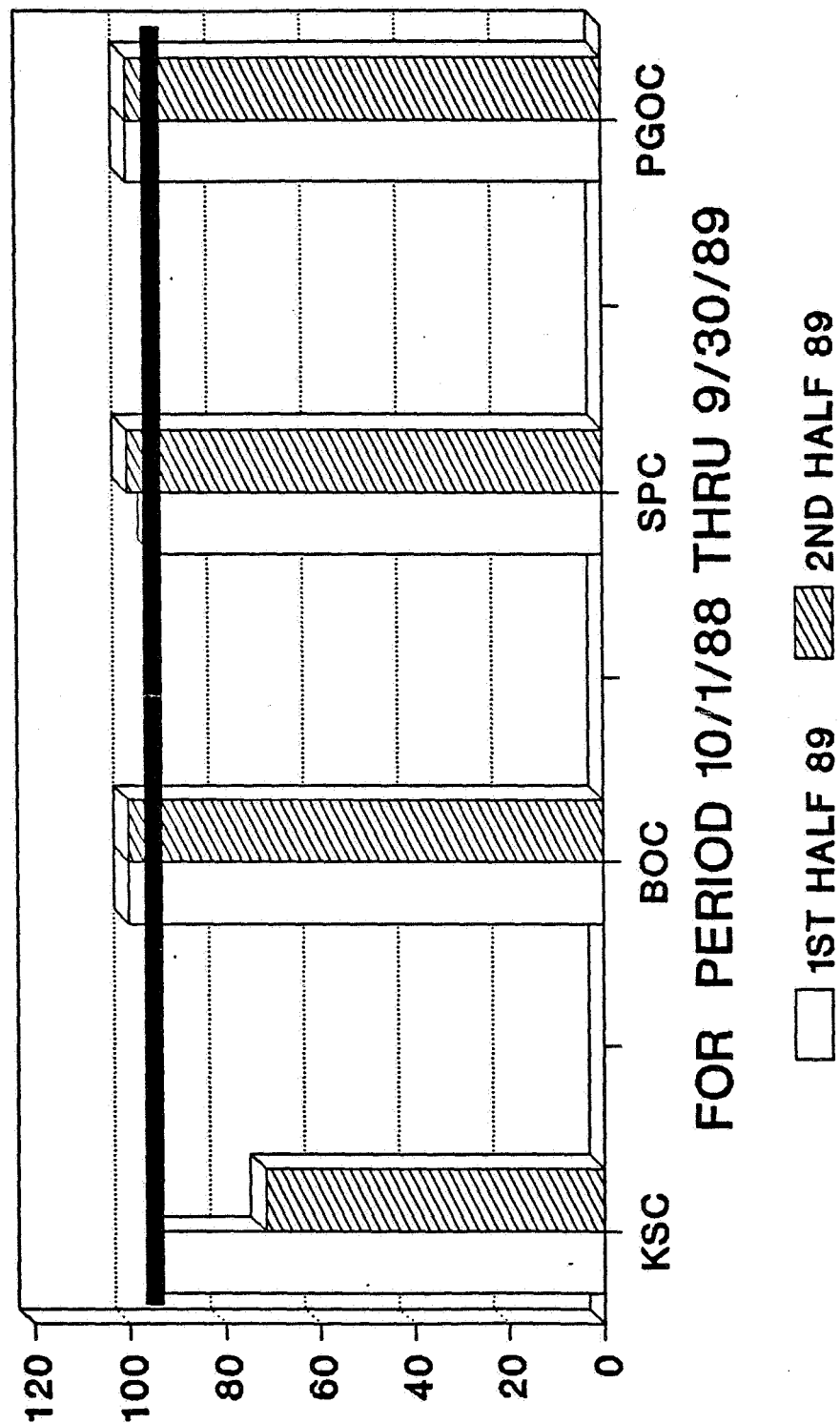
Timeliness of Surveys



NASA Standard 95%

Performance Measures

Timeliness of Surveys



NASA Standard 95%

80

PERFORMANCE MEASURES: EQUIPMENT MANAGEMENT
REPORTING PERIOD FROM _____ TO _____

5. TIMELINESS OF SURVEYS

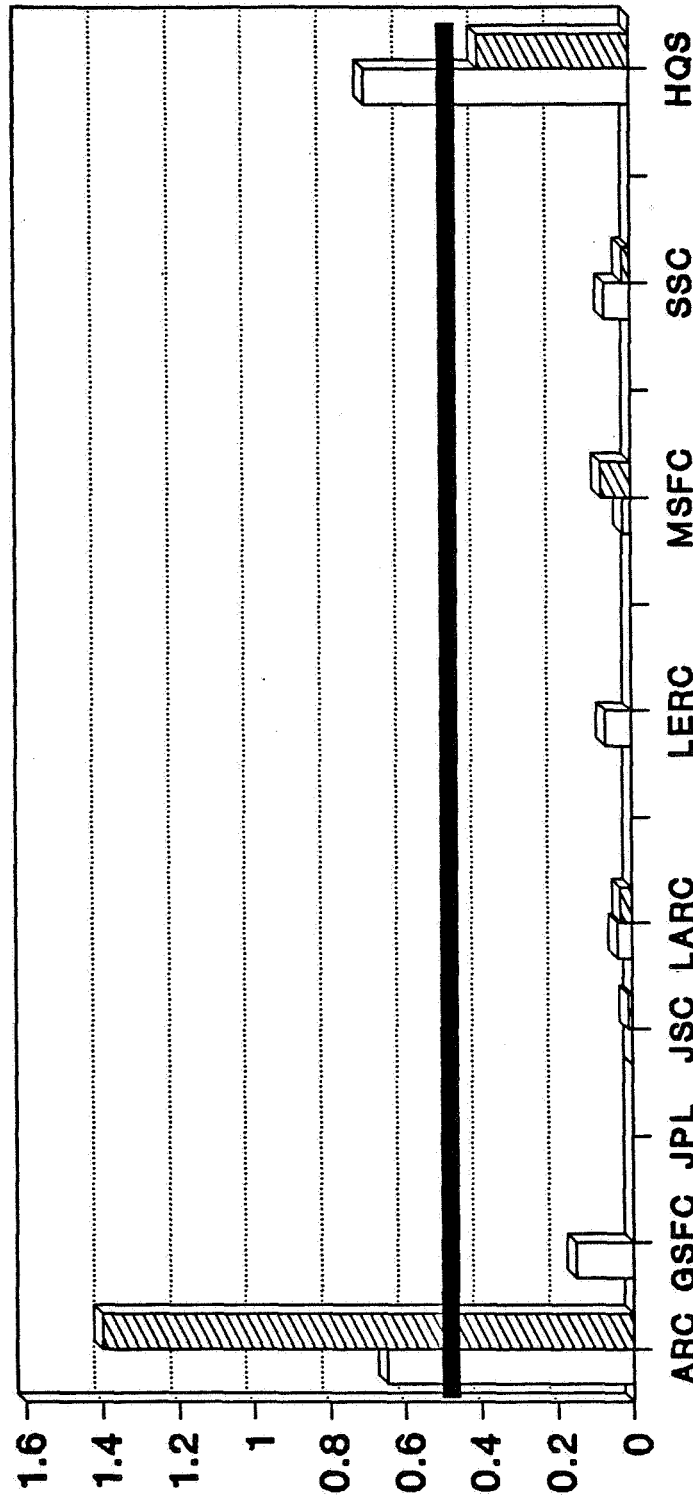
NATURE: Number of loss reports completed within 150 days of date of discovery divided by the number of surveys, expressed as a percentage.

SOURCE: Survey Report Register.

METHOD:

- A. From the Survey Report Register, subtract each date in the approval column from the date in the discovery column and enter the amount of surveys processed within 150 days.
- B. Enter the total number of surveys submitted.
- C. Divide A by B and multiply by 100 $(A/B) \times 100$. This is your timeliness of surveys frequency expressed as a percentage.

Performance Measures Found on Station (FOS) Rate

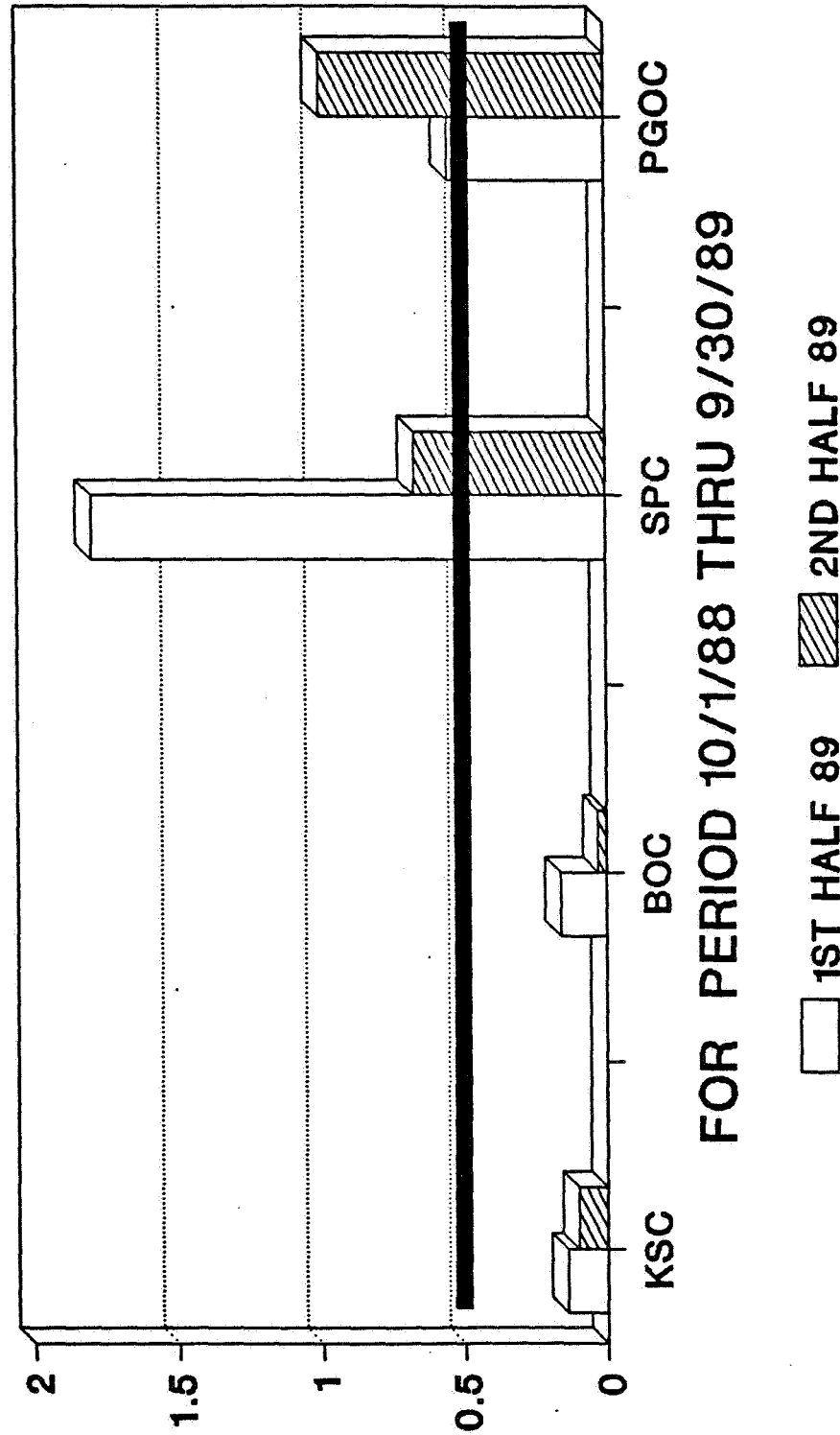


FOR PERIOD 10/1/88 THRU 9/30/89

□ 1ST HALF 89 ▨ 2ND HALF 89

NASA Standard .5%

Performance Measures Found on Station (FOS) Rate



NASA Standard .5%

PERFORMANCE MEASURES: EQUIPMENT MANAGEMENT
REPORTING PERIOD FROM _____ TO _____

2. FOUND ON STATION (FOS)

NATURE: FOS's divided by total equipment base, expressed as a percentage.

SOURCE: NEMS

METHOD:

- A. Enter and add the number of records on the following ADD transactions:

TR 12 _____

I12 _____

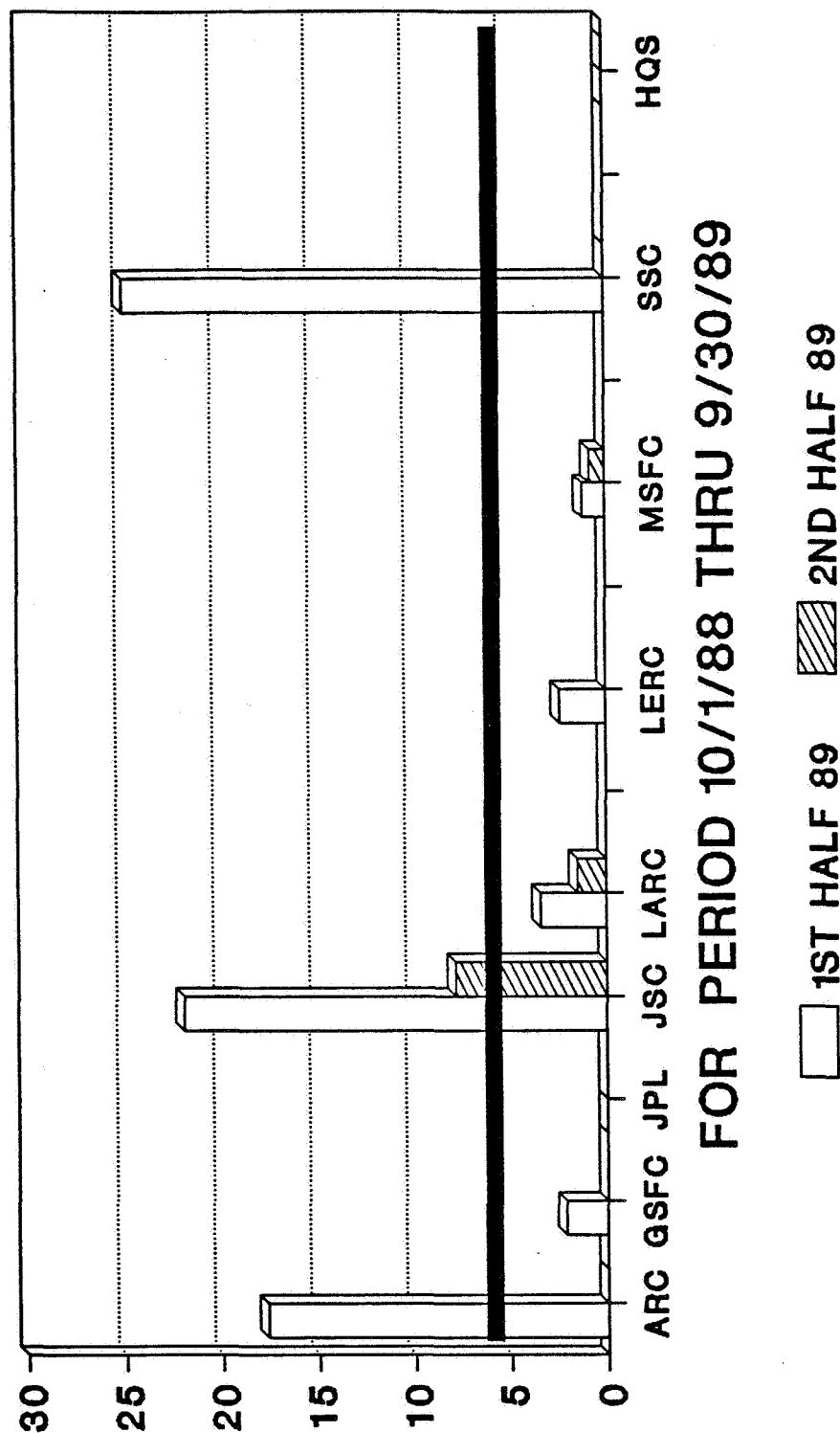
Total TRs _____

- B. Enter the amount of controlled equipment items in the NEMS data base. _____

- C. Divide the total entered in A by B and multiply by 100 $(A/B) \times 100$.
This is your FOS percentage. _____

Performance Measures

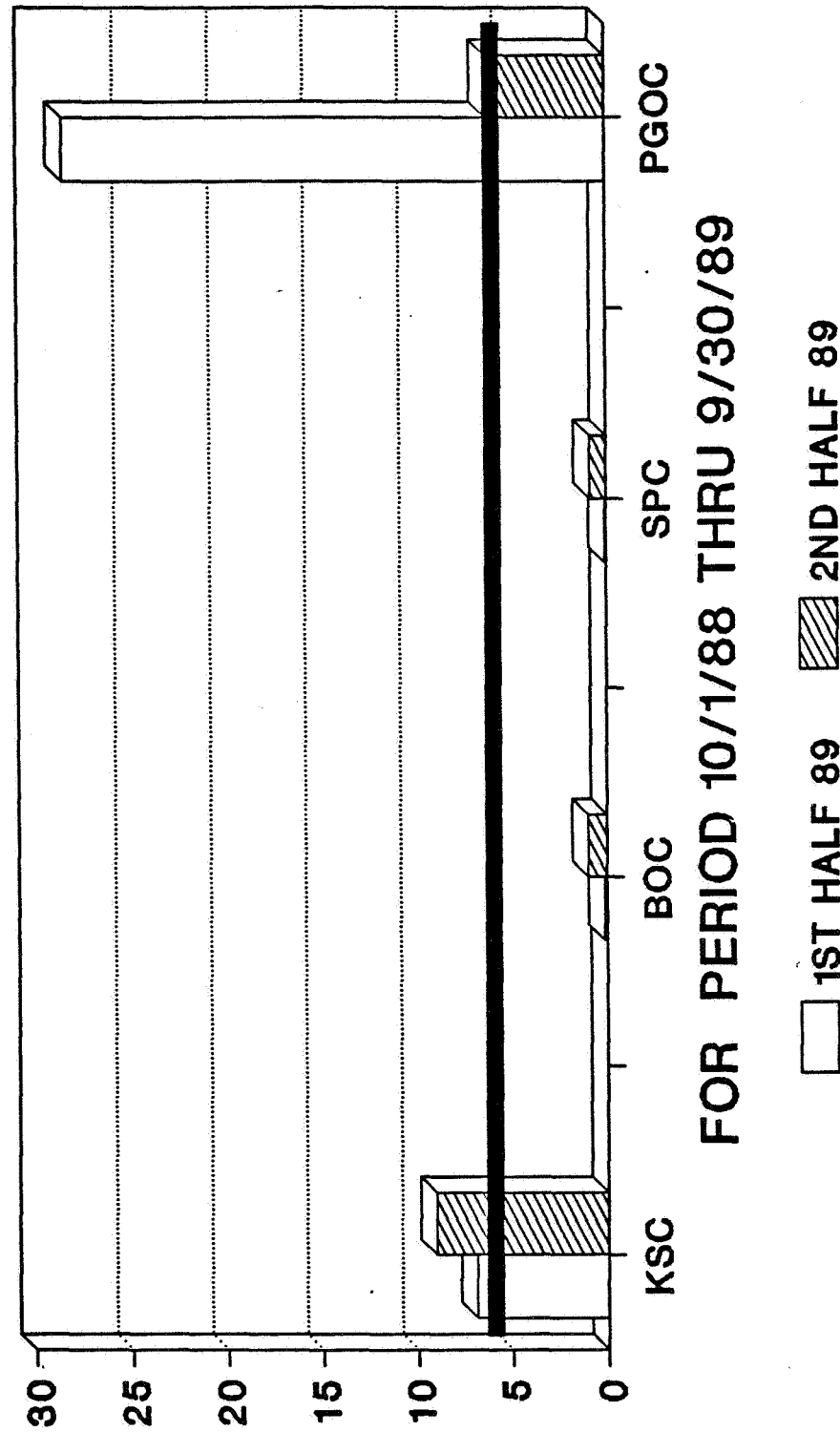
Inventory Discrepancy Rate



NASA Standard 6%

Performance Measures

Inventory Discrepancy Rate



PERFORMANCE MEASURES: EQUIPMENT MANAGEMENT
REPORTING PERIOD FROM _____ TO _____

3. INVENTORY DISCREPANCY RATE

NATURE: Inventory discrepancies adjusted divided by number of items inventoried, expressed as a percentage.

SOURCE: NEMS Inventory Module.

METHOD:

- A. Enter the total number of I(inventory) transactions. _____
- B. Enter the number of I34s (No change) TRs. _____
- C. Subtract B from A (A-B) and enter the result here. _____
- D. Enter the number of items in all closed inventory accounts. _____
- E. Divide C by D (C/D) and enter the result here. _____
- F. Multiply E by 100 (Ex100). This is your inventory discrepancy percentage. _____

EQUIPMENT MANAGEMENT: ANNUAL STANDARDIZED REPORTS

<u>REPORT</u>	<u>REFERENCE</u>	<u>DUE</u>
Performance Measures	Policy Letter	April 1 and September 30
Physical Inventory of Controlled Personal Property	Annual/Triennial (NHB 4200.1C, para 5.302)	April 1
Semiannual Report of Personal Property Management Operations	NF 1324 (NHB 4200.1C, para 1.311)	April 15 and November 15
Equipment Acquisition Document	NF 1511 (NHB 4200.1C, para 2.105)	As Required
NEMS Bar Code Tags FY Forecast	Policy Letter	July 31
Annual Report to Congress	(NHB 4200.1C, para 2.105i)	November 15

Equipment Budget Standards

- What type equipment is being budgeted for?
- Who prepares and monitors budget?
- How are budgeting figures arrived at (process) ?

Property Survey Officer Meeting

- Meeting held at NASA Headquarters on August 29-30, 1989
- 6 sites were represented at the meeting
ARC, GSFC, LARC, LERC, MSFC and HQS
- Guest speakers from Office of Inspector General, NASA HQ Security Office and NASA HQ Office of General Counsel
- The meeting resulted in 10 action items and 9 proposals being submitted for consideration

PROPERTY CUSTODIAN MODULE
SUPPLY & EQUIPMENT MANAGEMENT CONFERENCE

KENNEDY SPACE CENTER

DECEMBER 5, 1989

**CENTRAL DATA BASE
INTER-CENTER TRANSFERS**

CONFIGURATION CONTROL BOARD MEETING

KENNEDY SPACE CENTER

DECEMBER 4, 1989

CENTRAL DATA BASE INTER-CENTER TRANSFERS

MONDAY	CENTER A TRANSFERS AN ITEM TO CENTER BY USING TRANSACTION 65
MONDAY PM	DATA EXTRACTED DURING OVERNIGHT AND TRANSMITTED TO CDB
TUESDAY AM	TRANSMITTED DATA IS CHECKED AND SET UP FOR OVERNIGHT UPDATING OF CDB
TUESDAY PM	CDB IS UPDATED WITH MONDAY'S DATA, TRANSFER DATA IS SENT TO RECEIVING CENTERS
WED. PM	TRANSFER DATA FROM CDB IS PROCESSED BY RECEIVING CENTER (B)
THURSDAY	CENTER B CAN NOW ADD THE ITEM TO THEIR DATA BASE USING THE TRANSFER DATA

CENTRAL DATA BASE INTER-CENTER TRANSFERS

MONDAY	CENTER B ADDS AN ITEM TO THEIR DATA BASE FROM CENTER A (NO TRANSFER DATA)
MONDAY PM	DATA EXTRACTED DURING OVERNIGHT AND TRANSMITTED TO CDB
TUESDAY AM	TRANSMITTED DATA IS CHECKED AND SET UP FOR OVERNIGHT UPDATING OF CDB
TUESDAY PM	CDB IS UPDATED WITH MONDAY'S DATA, CENTER B ADD IS NOT A DUPLICATE
SOMETIME LATER	CENTER A DELETES THE ITEM

CENTRAL DATA BASE INTRA-CENTER TRANSFERS

<u>ADD</u> <u>TRANSACTION</u>	<u>DELETE</u> <u>TRANSACTION</u>
04	65
06	68
07	67

THE ADD TRANSACTION WILL FIRST CHECK THE HISTORY FILE
FOR THE COMPLEMENTARY DELETE TRANSACTION. IF ONE IS
NOT FOUND THE TRANSFER FILE WILL BE CHECKED.

NEMS CATALOGING

EQUIPMENT MANAGEMENT WORKSHOP

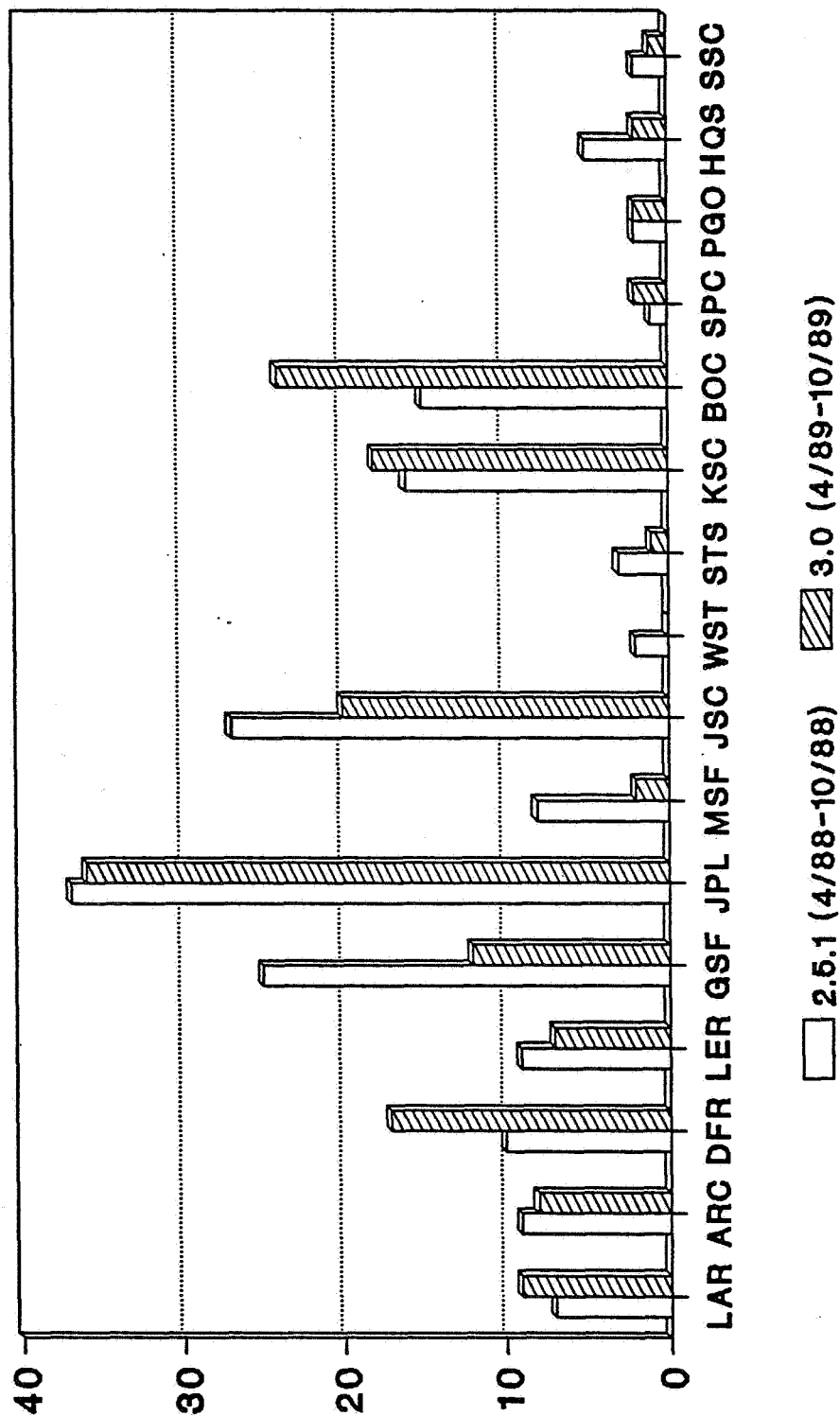
**KENNEDY SPACE CENTER
DECEMBER 5, 1989**

NEMS CATALOGING

MANUFACTURER CODES

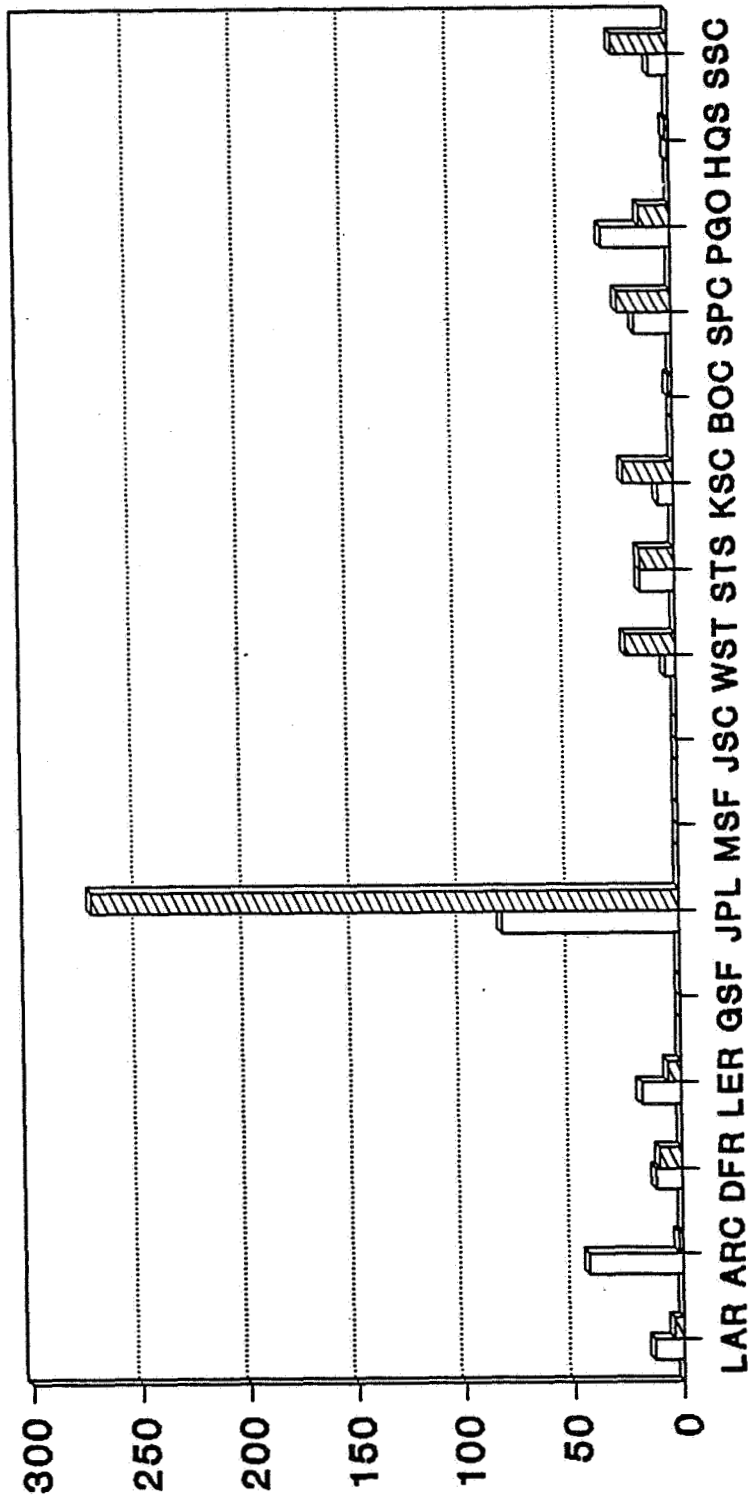
- CONTACT NEMS CENTRAL CATALOGER FTS 453-8517 FOR ASSIGNMENT OF MANUFACTURER CODE. HAVE THE FOLLOWING INFORMATION AVAILABLE: (1) COMPLETE MANUFACTURER NAME (2) LOCATION OF MANUFACTURER-CITY, STATE (3) ITEM NAME (4) MODEL NUMBER.
- NO ASSIGNMENT OF MANUFACTURER CODE WITHOUT LOCATION (CITY, STATE).
- ENCOURAGE PHONE USE TO CONTACT VENDORS AND MANUFACTURERS FOR PRODUCT INFORMATION.
- IN LIEU OF USING 'XXXXXX' ENTRIES FOR MANUFACTURER WITHOUT AN ASSIGNED CODE, CONTACT NEMS CENTRAL CATALOGER FTS 453-8517 FOR ASSIGNMENT OF CODE.

NEMS CATALOGING INVALID MFG CODES



NEMS CATALOGING

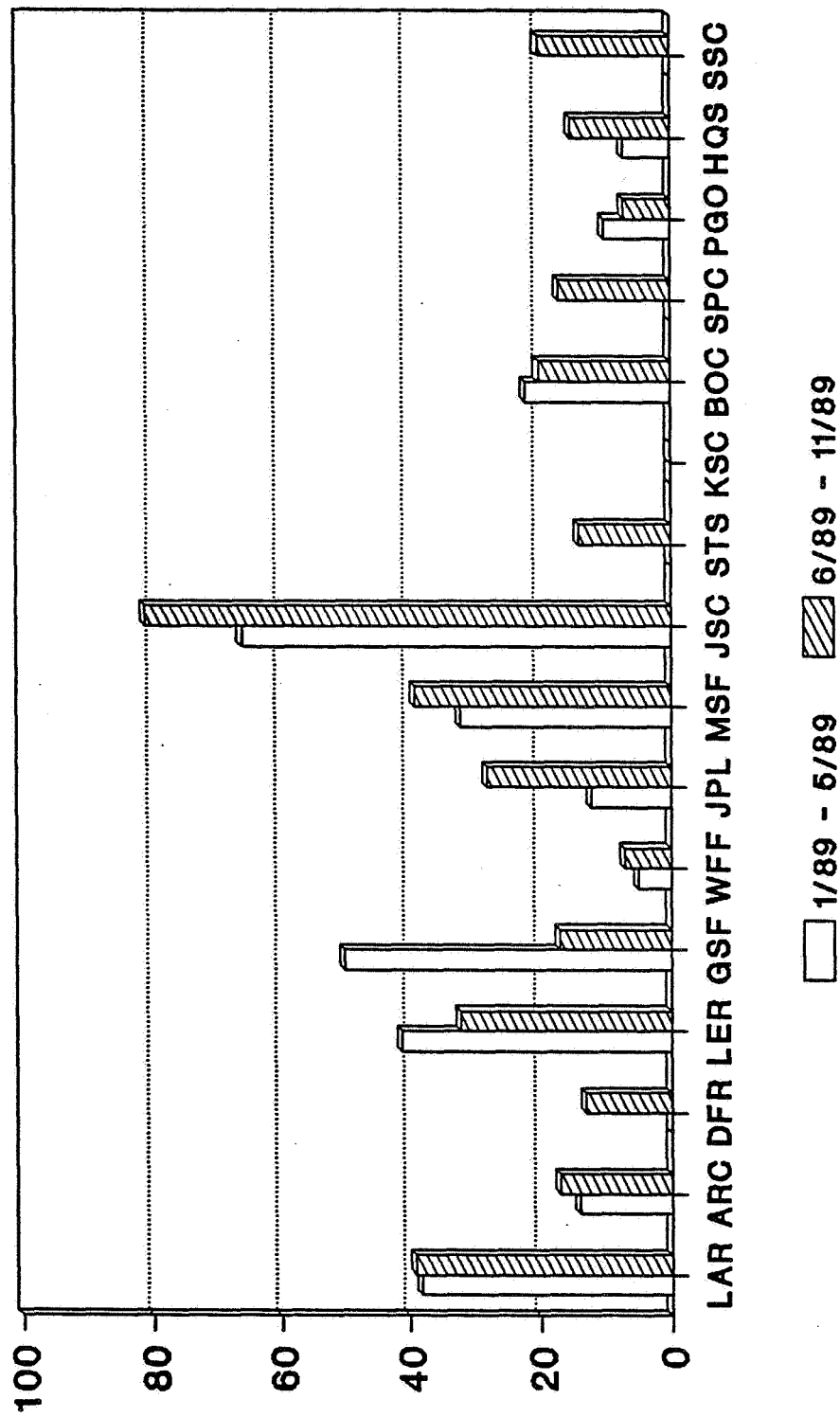
'XXXXX' ENTRIES - MFG CODE



☐ 2.5.1 (4/88-10/88)
 ☒ 3.0 (4/89-10/89)

NEMS CATALOGING

CALL-IN REQUESTS FOR MFG CODES



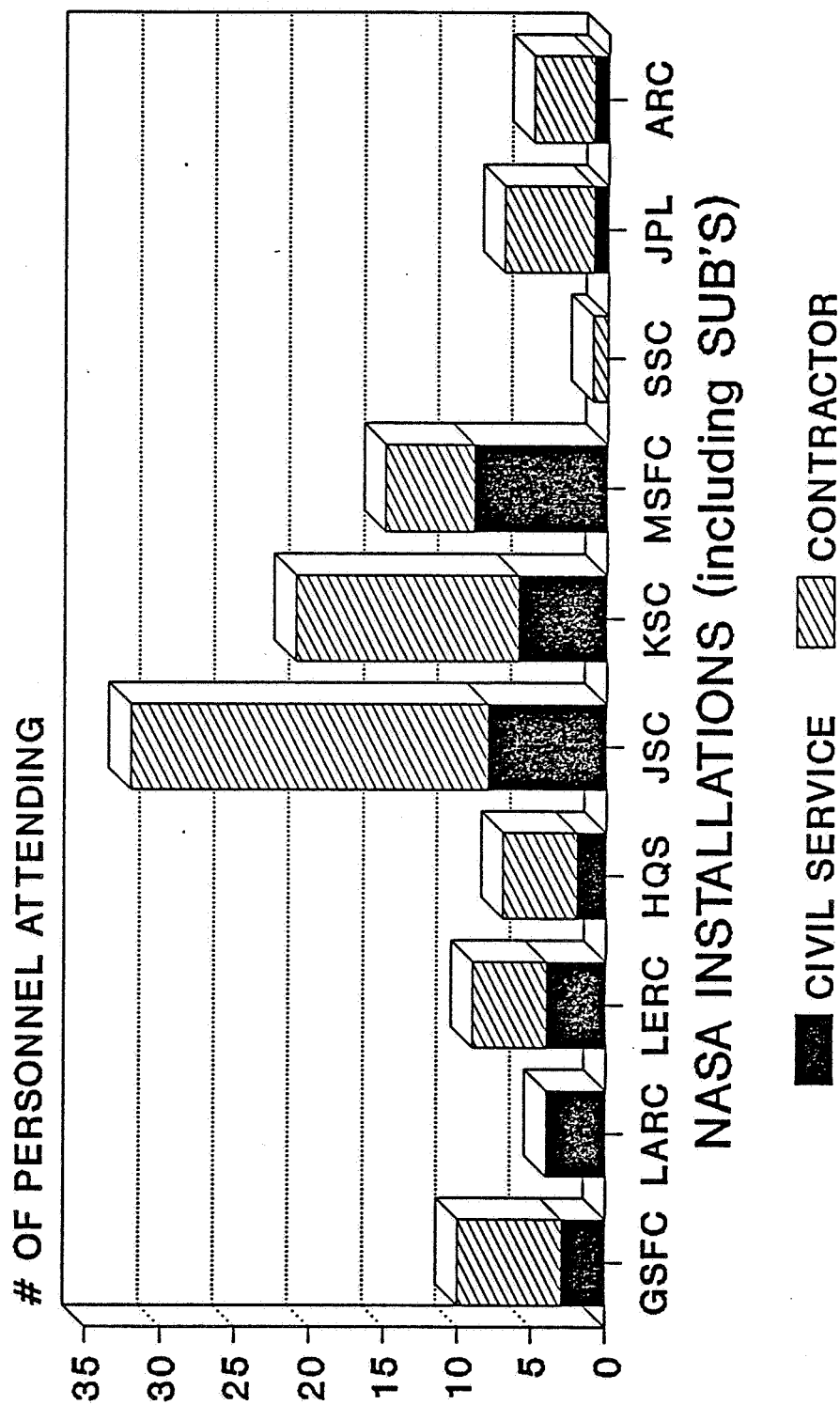
MFG CODE TABLE REVIEW STATUS

Total Mfg Codes (CAGE & NASA-assigned)	16,826
NASA-assigned Codes (to be reviewed for valid CAGE)	5153
NASA-assigned Codes reviewed (11-30-89)	893
NASA-assigned Codes converted to valid CAGE Codes	86
'Hit Rate'	10%
Remaining NASA-assigned Codes to be reviewed for valid CAGE Codes (11-30-89)	4260

- * This task would be expedited with proposed acquisition of CD-ROM along with 'FED-LOG' compact disc containing H4/H8 CAGE directory.

CATALOGING TRAINING

JUNE 1989



•IMPROVEMENT OF MODEL NO,ITEM NAME INPUT

INSTALLATION NEMS CATALOGER

- REVIEWS AND STANDARDIZES ITEM NAMES, MFG CODES AND MODEL NUMBERS.
- EACH CENTER: PLEASE IDENTIFY YOUR CATALOGER.

STANDARDIZED ITEM NAME CENTRAL DIRECTORY

- USE CENTRAL DATA BASE AS THE STANDARDIZED
ITEM NAME DIRECTORY
- ESTABLISH PROGRAM TO DISSEMINATE STANDARDIZED
ITEM NAMES TO CENTERS MORE FREQUENTLY

COMPACT DISC READ ONLY MEMORY (CD-ROM)

- CD-ROM: AN OPTICAL MEDIA WHICH WILL ENABLE LOGISTICIANS TO ACCESS FEDERAL CATALOG SYSTEM (FSC) DATA UTILIZING THE POWER AND PRODUCTIVITY OF A PERSONAL COMPUTER.
- ACCESS THE FOLLOWING PUBLICATIONS:
 - ✓ COMMERCIAL AND GOVERNMENT ENTITY CODES (H4/H8)
 - ✓ FEDERAL ITEM NAME DATA (H6)
 - ✓ FEDERAL SUPPLY CLASSIFICATION (H2)
- AVAILABLE ON FEDERAL SUPPLY SCHEDULE GSOOF-01486, NSN 7025-01-272-5039, COST \$1995.00 EA.

3.0 RELEASE

- ON A CHANGE TRANSACTION TC60, CENTERS CANNOT CHANGE AN ITEM NAME THAT HAS BEEN STANDARDIZED.
- ERROR MESSAGE 139: ITEM NAME HAS BEEN STANDARDIZED AND MUST NOT BE CHANGED.
- IF A CONFLICT ARISES OVER THE STANDARDIZED ITEM NAME, COMMENTS MUST BE SUBMITTED FOR CONSIDERATION TO CODE NIE, ATTN: MANAGER, EQUIPMENT PROGRAMS.

**AUTOMATED INFORMATION MANAGEMENT
(AIM) SYSTEM
INTERFACE CONSIDERATIONS**

333

**SUPPLY AND EQUIPMENT
CONFERENCE MANAGEMENT
KENNEDY SPACE CENTER**

**BETSY SIRK
PROGRAM TECHNICAL MANAGER
DECEMBER 5, 1989**

PRESENTATION OVERVIEW

- **INTERFACE PROBLEMS**

- **SOLUTIONS**

- **SUMMARY**

INTERFACE PROBLEMS

- **CHANGE TO ONE SYSTEM MAY IMPACT ANOTHER WHEN DATA ELEMENTS ARE SHARED BY TWO OR MORE SYSTEMS**
- **INFORMATION ABOUT ANY GIVEN SYSTEM NOT READILY AVAILABLE TO DEVELOPERS AND USERS OF ANOTHER SYSTEM**

SOLUTIONS

- **ESTABLISH A DATA ADMINISTRATION PROGRAM TO:**
 - **DEFINE APPROVAL PROCESS FOR SYSTEM CHANGES THAT AFFECT OTHER SYSTEMS**
 - **DEVELOP FILE AND DATA ELEMENT NAMING STANDARDS**
 - **DEVELOP OF GLOBAL DATA DICTIONARY**
- **OTHER SOLUTIONS**
 - **COOPERATION AMONG CONFIGURATION CONTROL BOARDS AND OTHER PROJECT ACTIVITIES**
 - **COORDINATION OF RELEASE SCHEDULES AMONG AIM SYSTEMS**

SUMMARY

- **COMPLEX PROBLEM**
 - **MULTIPLE ORGANIZATIONS AND SYSTEMS INVOLVED**
 - **MULTIPLE ITEMS TO CONTROL, EG. DATA, RELEASES, STANDARDS**
- **MORE CAN BE DONE NOW TO ALLEVIATE PROBLEM**
- **YOUR FEEDBACK IS CRITICAL**

**SUPPLY AND EQUIPMENT MANAGEMENT CONFERENCE
ARE WE BUDGETING FUNCTIONS PROPERLY?**

BUDGET SUBFUNCTION	SUPPLIES	EQUIPMENT
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FOR EXAMPLE

FACILITY MAINTENANCE

EQUIPMENT MAINTENANCE

ADP MAINTENANCE

ADP EQUIP/LEASE/PURCHASE

PHOTO SERVICES

GRAPHICS

PRINTING AND REPO.

GEN. PURPOSE MOTOR VEH.

INTERAGENCY MOTOR POOL

AIRCRAFT OPERATIONS

ADMIN EQUIP/LEASE/PURCHASE

OFFICE FURNITURE

Egrip

**NASA
PROGRAM SUPPORT
COMMUNICATIONS NETWORK**

**BOEING COMPUTER SUPPORT SERVICES
MARSHALL SPACE FLIGHT CENTER
HUNTSVILLE, ALABAMA**

**22ND ANNUAL S&EM CONFERENCE
MEL POTTS, BOEING PROPERTY MANAGER
HELEN KENNAMER, BOEING INVENTORY CONTROL**

NASA-PSC

Program Support Communications Network

AGENDA

- Overview of PSC Network - Mel
- PSCN Equipment Statistics - Helen
- Special Property Management topics - Mel
- General Discussion - Open

NASA-PSC

Program Support Communications Network

OVERVIEW OF PSC NETWORK

NASA-PSC

393 S&EM HK JWL 11/29/89 02

sp

Program Support Communications Network

DESCRIPTION

PSCN is a long-distance, common-user, digital telecommunications network that provides these services to NASA:

- Voice communications
- Data communications
- Message services (electronic mail)
- Video teleconferencing
- Facsimile services

NASA-PSC

Program Support Communications Network

ELEMENTS

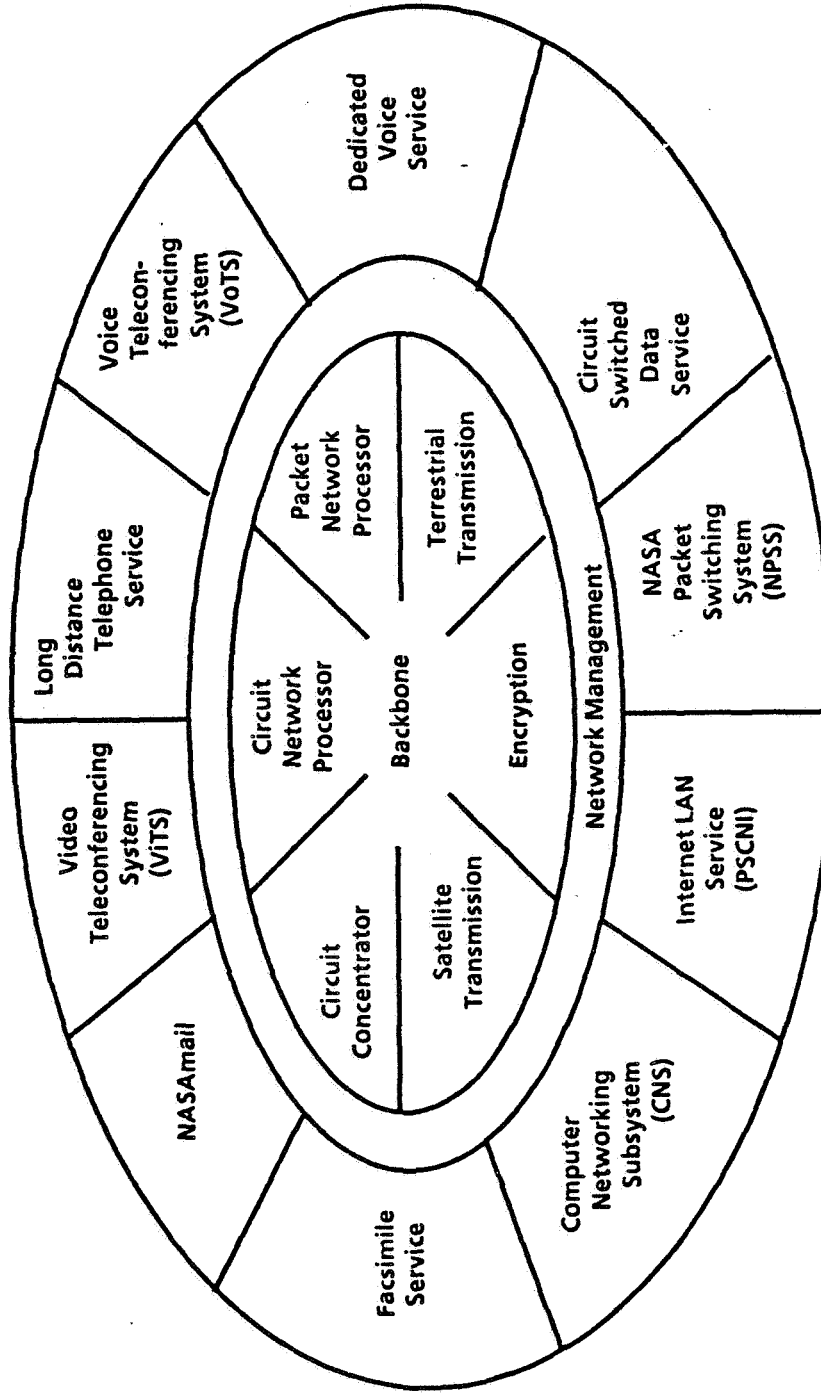
PSCN is composed of the following components:

- Gateways
- Tail circuits
- Satellite system
- Terrestrial system
- Network Control Center
- Network Management System
- Communications Resource Facility
- End-user services
- 17 gateway locations

NASA-PSC

Program Support Communications Network

NASA PSC SERVICES SHARING THE BACKBONE NETWORK



NASA-PSC

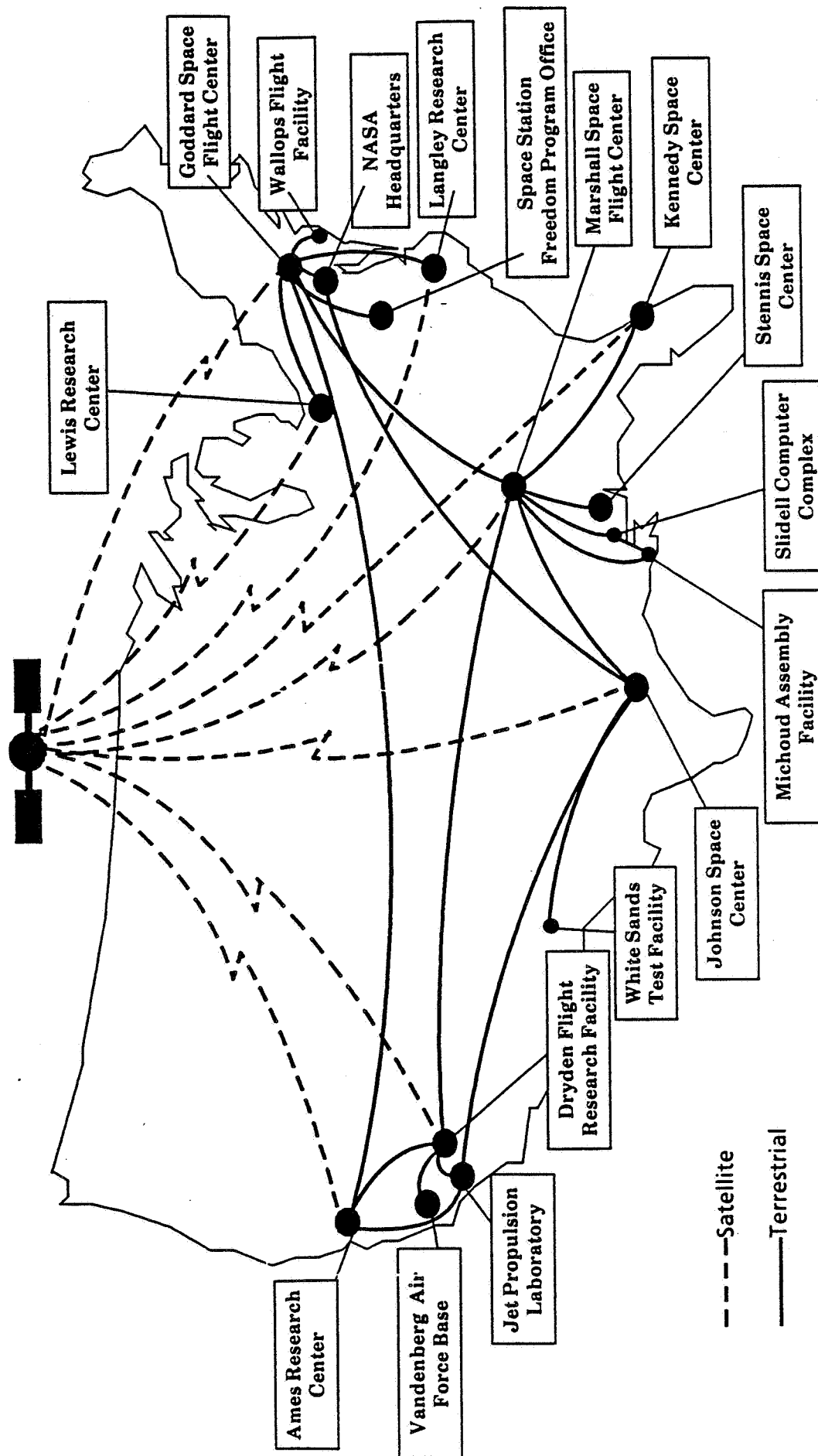
Program Support Communications Network

ELEMENTS (CONT)

- 1500 directly monitored devices
- 5000 indirectly monitored devices
- 60 Mbps time division multiple access satellite
- 8 earth stations
- 80 terrestrial T-1 main circuits

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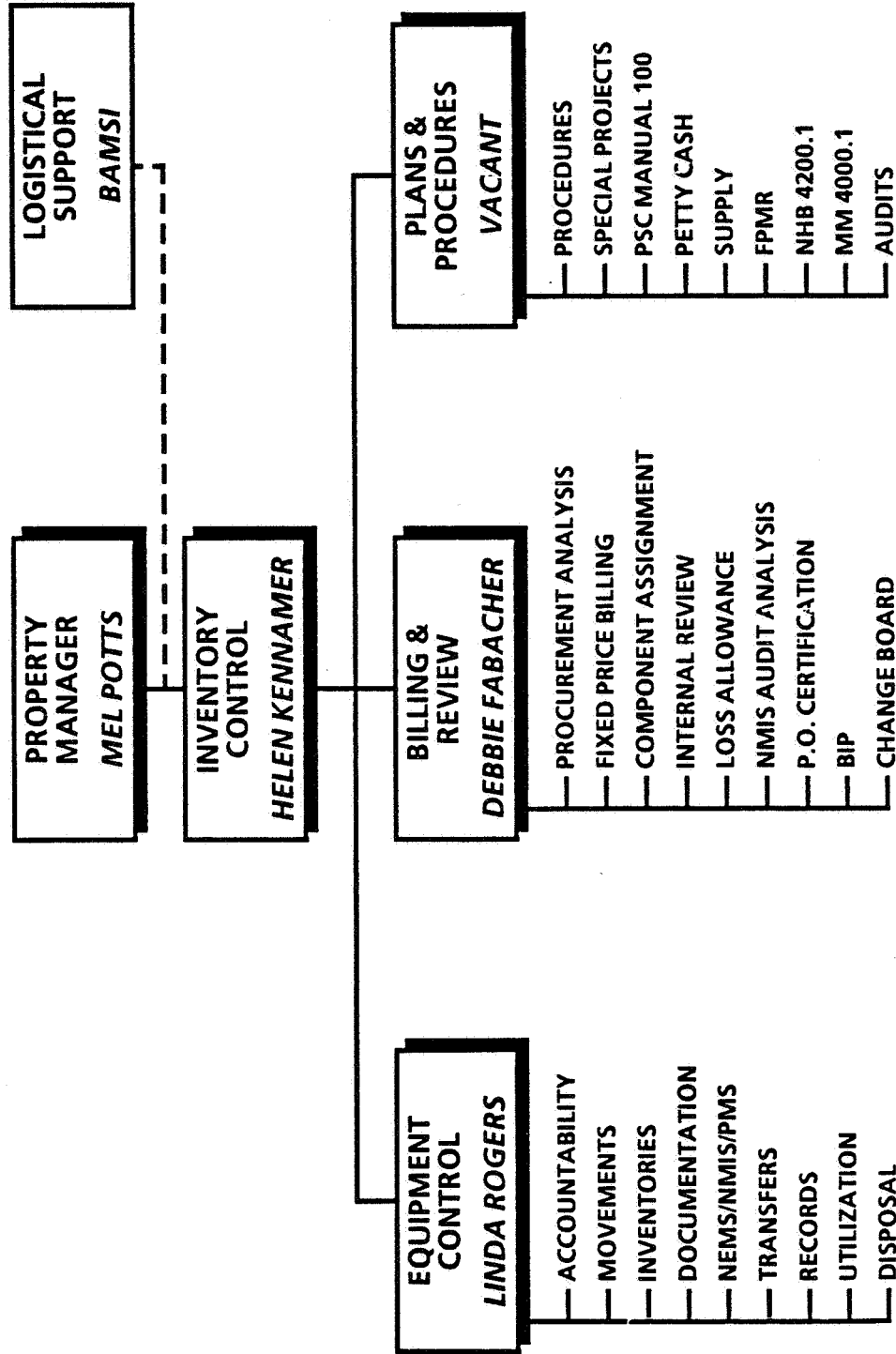
Program Support Communications Network



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BOEING-BAMSI PSC PROPERTY MANAGEMENT



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Program Support Communications Network

PSC SITE REPRESENTATIVES

NASA SITE

AMES RESEARCH CENTER
VANDENBERG AIR FORCE BASE
(415) 694-4016
LDTs 464-4016

DRYDEN FLIGHT FACILITY
(805) 258-3523
LDTs 961-3523

GODDARD SPACE FLIGHT CENTER
Wallops Flight Facility
(301) 286-8501
LDTs 888-8501

NASA HEADQUARTERS
(202) 453-1764
LDTs 452-1764

JET PROPULSION LABORATORY
(818) 354-0150
LDTs 792-0150

JOHNSON SPACE CENTER
WHITE SANDS TEST FACILITY
(713) 483-7544
LDTs 525-7544

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Edwards, CA 93523-5000

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Mail Code 543
Bldg. 12, Rm. E-133A
Greenbelt, MD 20771

MICHAEL SHEEHAN
FOB 10B Rm. A26
600 Independence Ave., SW
Washington, DC 20546

GENE BREAZIER
Mailstop 202-209
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4800 Oak Grove Dr.
Pasadena, CA 91109

BILL RAMEY
Mail Code FD
Bldg. 17, Rm. 117
2101 NASA Road 1
Houston, TX 77058

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PSC SITE REPRESENTATIVES

NASA SITE

KENNEDY SPACE CENTER
(407) 867-7726
LDTs 823-7726

LANGLEY RESEARCH CENTER
(804) 864-7647
LDTs 928-7647

LEWIS RESEARCH CENTER
(216) 433-5199
LDTs 297-5199

MICHoud ASSEMBLY FACILITY
SLIDELL COMPUTER COMPLEX
STENNIS SPACE CENTER
(504) 646-7208
LDTs 680-7208

MARSHALL SPACE FLIGHT CENTER
(205) 461-4703
LDTs 824-6866

SPACE STATION FREEDOM PROJECT OFFICE
(703) 487-7134
LDTs 457-7134

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21000 Brookpark Rd.
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LES RIDAUGHT
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1010 Gause Blvd.
Slidell, LA 70458

ED KROM
Bldg. 4207, Rm. 111
MSFC, AL 35812

DENNIS HYDE
NASA Code SSO
Room 1417
10701 Parkridge Blvd.
Reston, VA 22091-4398

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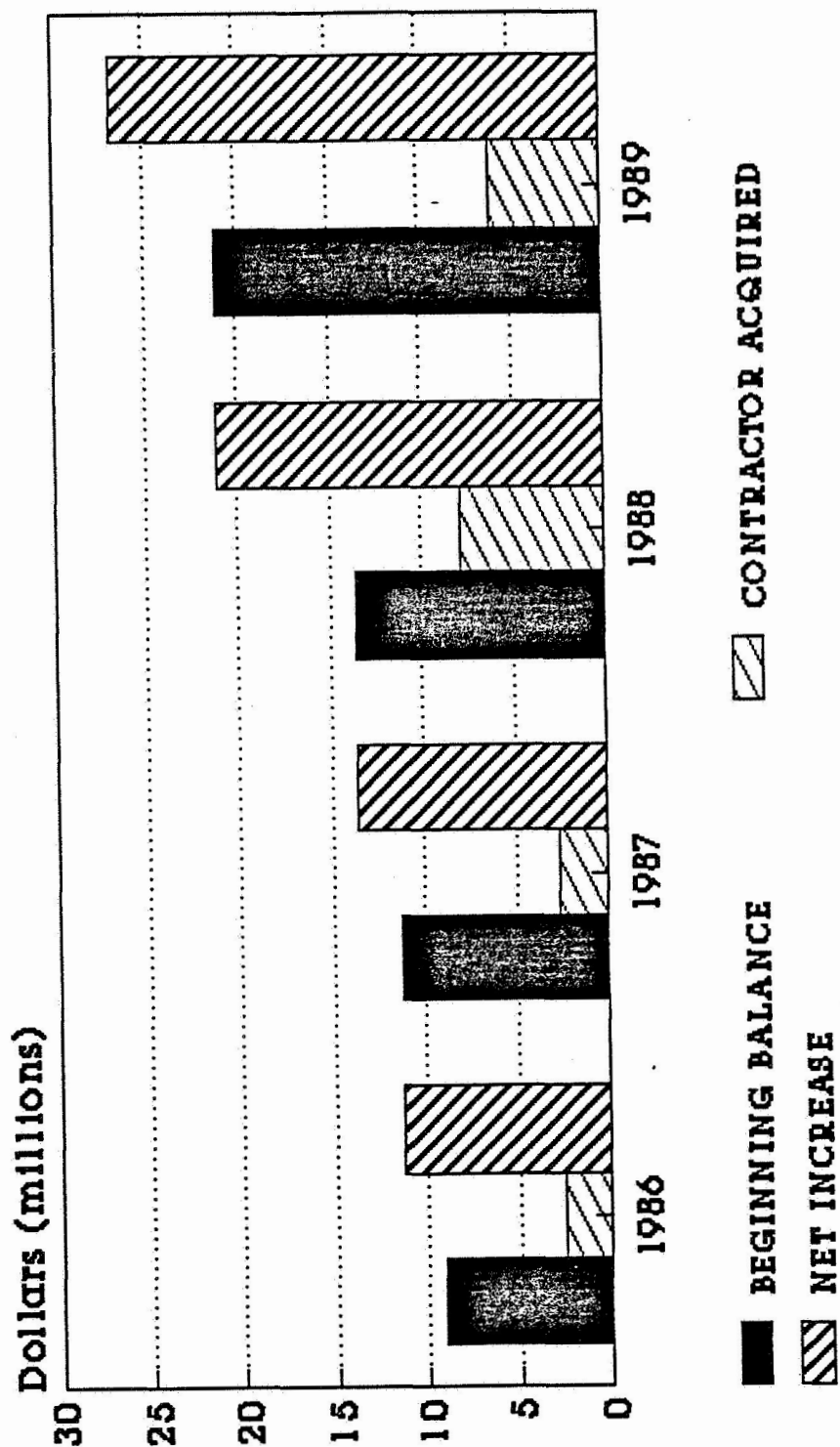
PSCN EQUIPMENT STATISTICS

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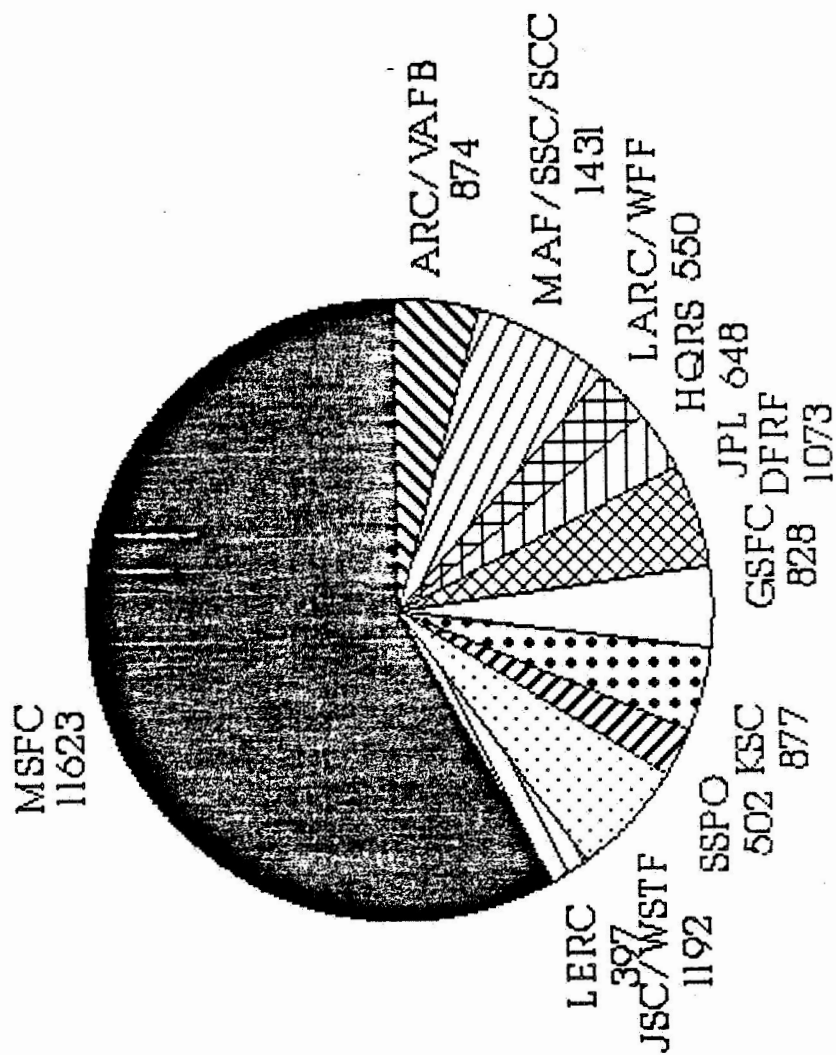
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PSC NASA EQUIPMENT CONTRACTOR ACQUIRED

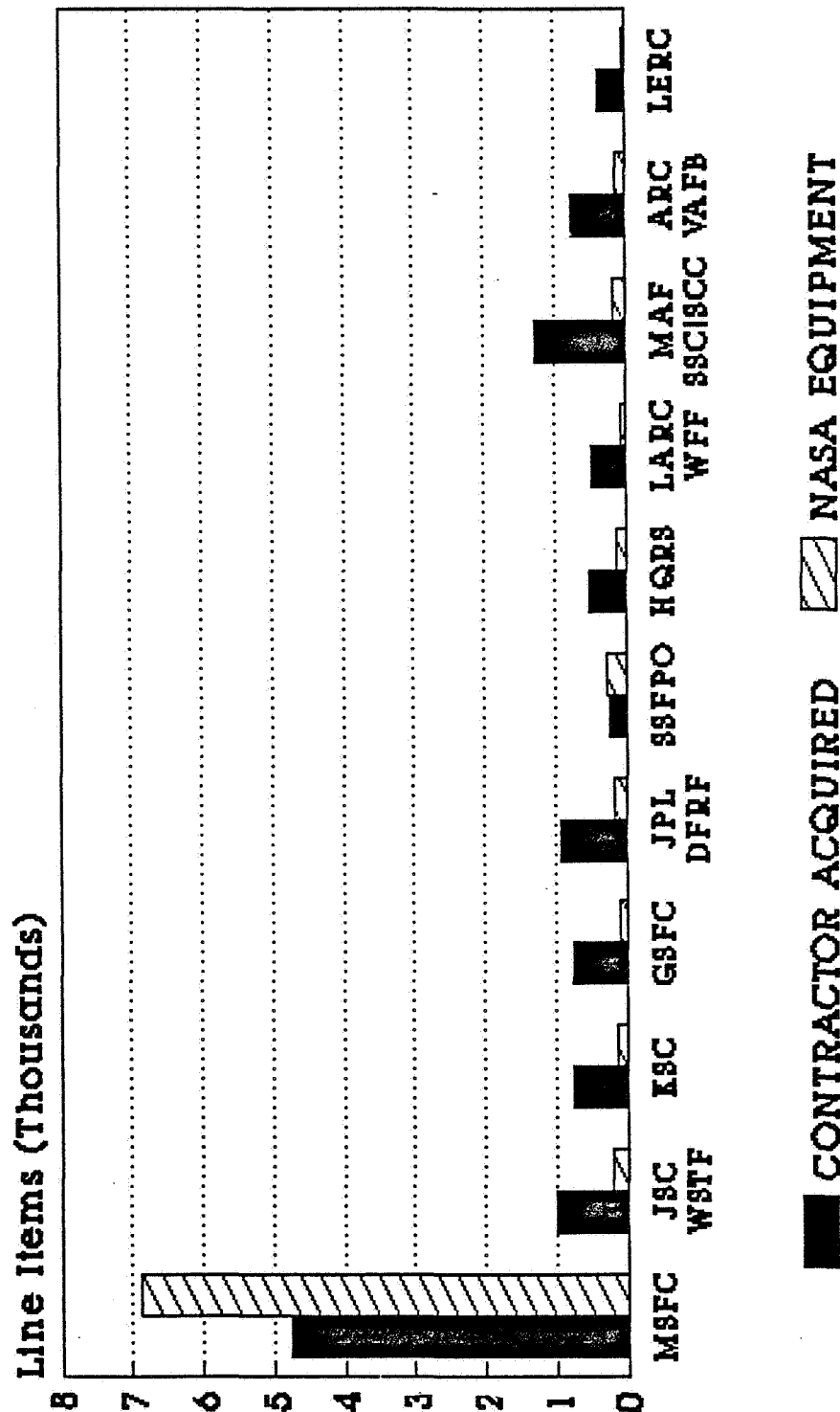


PSC PROPERTY MANAGEMENT EQUIPMENT BY LOCATION



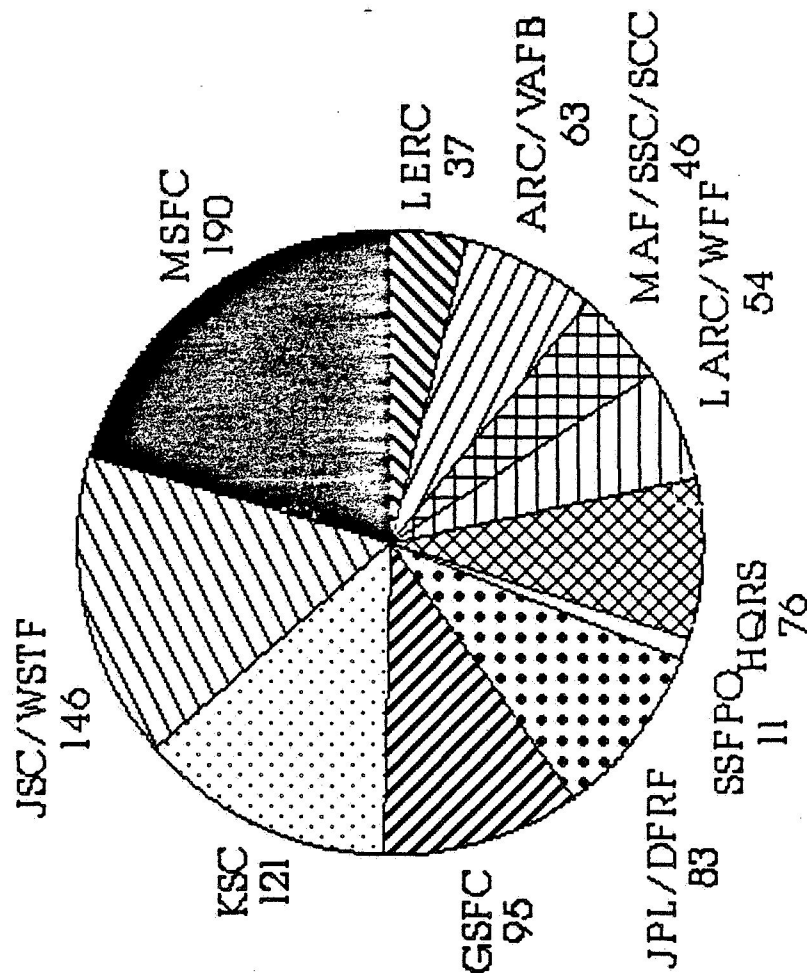
NOVEMBER 1989

PSC INVENTORY DISTRIBUTION NASA AND C/A EQUIPMENT



NOVEMBER 1989

PSCN FACSIMILE MACHINES NASA CENTER DISTRIBUTION



922 MACHINES 11/1/89

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SPECIAL PROPERTY MANAGEMENT TOPICS

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BOEING & NEMS EQUIPMENT TAGS

- Present Boeing tags will be replaced with new NEMS "Installment-Sales" tags
- NEMS tags are placed on all CPAF-controlled equipment items

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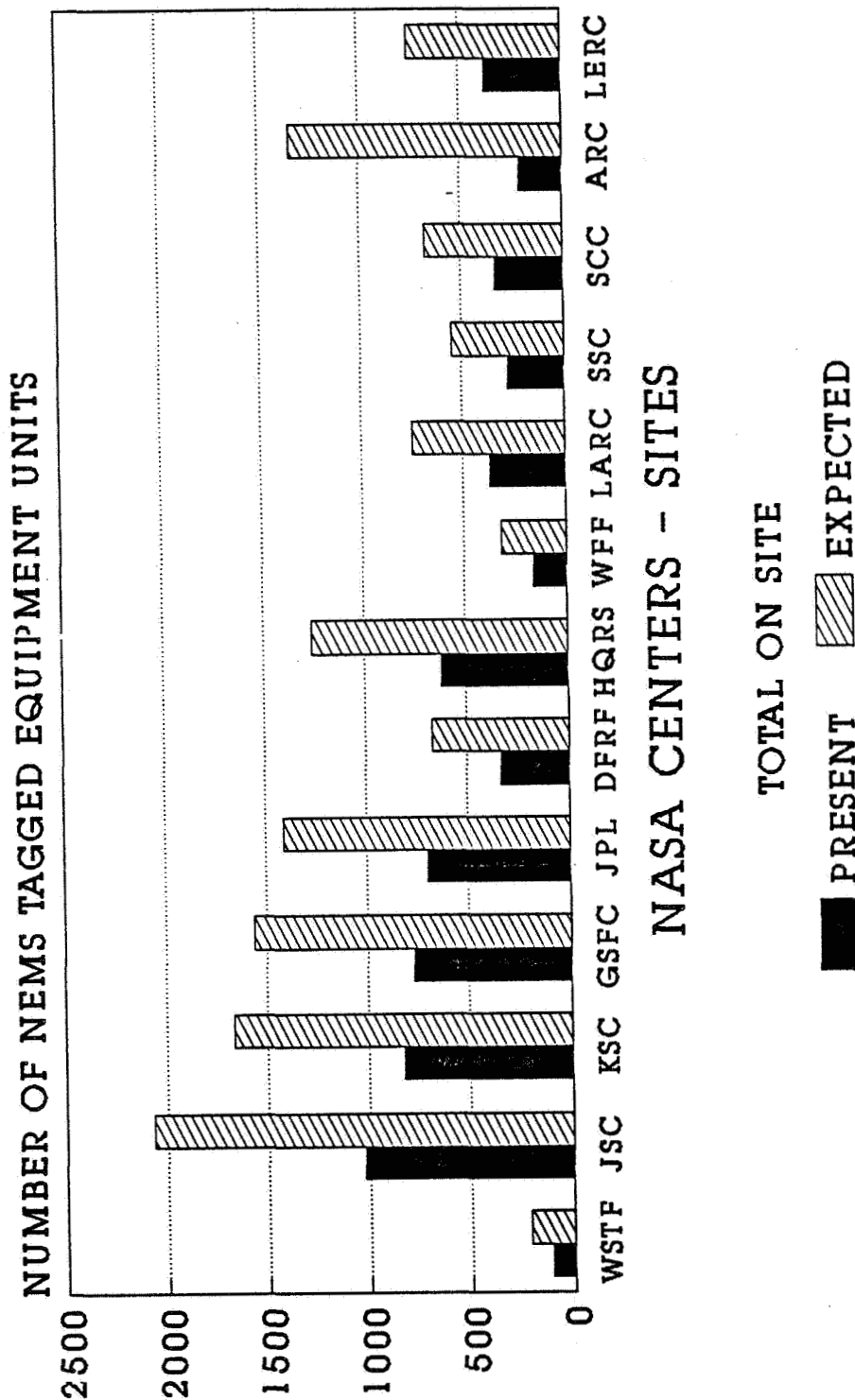
ACCOUNTABILITY AND INVENTORY SITUATIONS

- Accountability of all PSCN equipment remains at MSFC
- No NEMS transfer/borrow-out transactions are accomplished
- Inventory overages will occur

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PSC INVENTORY DISTRIBUTION

PROJECTED GROWTH FROM 1990 TRANSFER

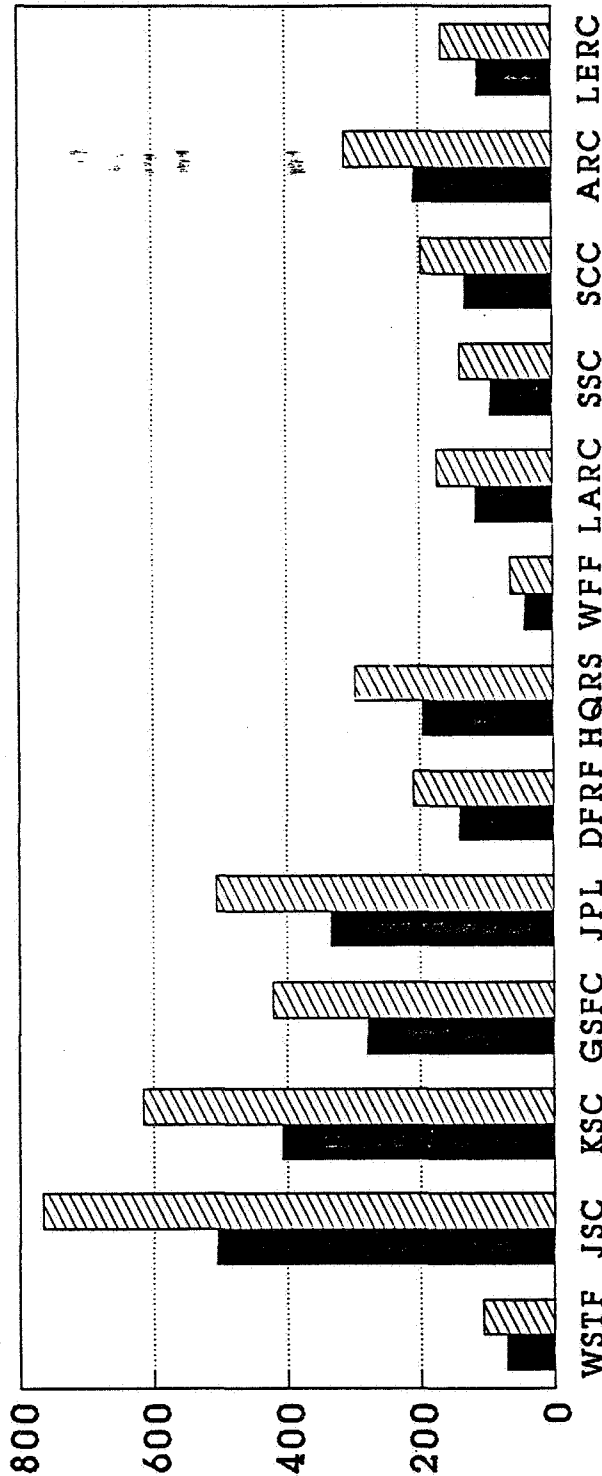


NOVEMBER 1989

PSC INVENTORY DISTRIBUTION

PROJECTED GROWTH FROM 1990 TRANSFER

NUMBER OF NEMS TAGGED EQUIPMENT UNITS



NASA CENTERS - SITES

OUTSIDE OF GATEWAY

PRESENT EXPECTED

NOVEMBER 1989

CONTRACT PROPERTY WORKSHOP

Pattie Wilder

CONTRACT PROPERTY WORKSHOP

WEDNESDAY, DECEMBER 6, 1989
2:30 - 4:30 p.m.

COCOA BEACH HILTON
SAWGRASS ROOM

CONTRACT PROPERTY WORKSHOP SCHEDULE

2:30 p.m. FAR Facilities Policy

Contractor Acquisitions

- CO Consent**
- Screening**

CONTRACT PROPERTY WORKSHOP

SCHEDULE (CONTINUED)

3:15 p.m. IPGP Contracts

- Transfer to Center**
- Reporting to NEMS**

**On-site Accountable
(FAR 45.5) Contracts**

**CONTRACT PROPERTY WORKSHOP
SCHEDULE (CONTINUED)**

**4:00 p.m. SEMO/IPO/CO/CONTRACTOR
INTERFACE**

**RON FINCHER
KSC INDUSTRIAL PROPERTY OFFICER**

**CONTRACT PROPERTY WORKSHOP
SCHEDULE (CONTINUED)**

4:15 p.m. PSCN CONTRACT

**MEL POTTS
PROPERTY ADMINISTRATION
BOEING SERVICE COMPANY, MSFC**

FAR 45.302 BASIC FACILITIES POLICY

**CONTRACTORS PROVIDE ALL FACILITIES
THEY NEED TO PERFORM CONTRACTS
WITHOUT COST TO THE GOVERNMENT**

FACILITIES POLICY EXCEPTIONS

(FAR 45.302-1(a)(1)--(5))

- 1. Operation of a Government-owned facility, or**
- 2. Support industrial preparedness, or**
- 3. General purpose items incorporated into ST or STE per contract, or**
- 5. As otherwise authorized by law, or**

FACILITIES POLICY EXCEPTIONS

(CONTINUED)

(OLD WORDING)

- 4. Contractor submits statement of inability or unwillingness to the CO, and the NASA center director determines that the contract cannot be fulfilled by any other practical means or that the public interest will be served by providing the facilities.**

FACILITIES POLICY CHANGE

New Exception 4:

- o Unwillingness exception is removed**
- o Contractor must provide evidence that private financing was sought**
- o Center director must sign formal D&F**

WHAT ARE FACILITIES?

FAR 45.101

Government property consists of two basic types:

- 1. Real property (Land, buildings, etc.)**
- 2. Personal property**
 - a. Material**
 - b. Specially designed equipment/tooling**
 - c. General purpose equipment
(including commercially available tooling and test equipment)**

WHAT ARE FACILITIES?

(FAR 45.301)

FACILITIES are not only real property but also all general purpose equipment (PLANT EQUIPMENT).

PLANT EQUIPMENT (FAR 45.101) is not only manufacturing equipment but also such items as furniture, office equipment, computers, vehicles, and accessories to those items.

***definition has no dollar threshold!**

CONTRACTOR ACQUISITIONS
(FAR 52.244-2)

WHEN A POLICY EXCEPTION EXISTS,
contractor obtains authority to purchase
a facilities item by notifying the CO
under paragraph (a)(4) of Subcontracts
clause if CO consents (paragraph (c)).

The requirement for CO consent to
purchase facilities cannot be waived
on the basis of having an approved
purchasing system (see paragraph (d)).

No dollar threshold applies.

SCREENING

FAR 45.302-1(b)

Government excess lists must be screened before new facilities may be authorized.

§ For items \$1000 and over, NEMS must be screened as well. (NFS 18-52.245-70)

The contractor submits a DD 1419 ss has self-screening authority.

CERTIFICATE OF NONAVAILABILITY

NFS 18-45.7102

***Certificate of non-availability on
DD 1419 is not CO consent.***

Both are required.

***Certificate of non-availability
number from DD 1419 is now required
on all DD 1342's, Block 22.***

INSTALLATION-PROVIDED PROPER,

NFS 18-52.245-71

- o Performance on NASA installation.**
- o NASA keeps official records.**
- o Contractor has user responsibility.**
- o NASA buys all facilities items unless contract EXPRESSLY STATES contractor authority.**

IPGP RECEIVING/REPORTING

- o Immediately report receipts to NASA property organization.**
- o Transfer accountability to NASA (via DD 1149 or other document).**
- o Tag should be ECN.**
- o If Alternate 1 to NFS 18-52.245-71 in contract, submit quarterly report of all acquisitions to CO and IPO.**

IPGP REPORTING TO NEMS

NO CONTRACTOR ACQUISITIONS PAID
FOR WITH CONTRACT FUNDS SHOULD
REPORTED TO NEMS USING THE "01"
TRANSACTION EXCEPT BY NEMS SUB-
INSTALLATION CONTRACTORS.

ON-SITE ACCOUNTABLE CONTRACTORS

NFS 18-52.245-74

- o Clause is required when Code NIE approval to not use IPGP for an on-site contract is granted.*
- o Intended only for large, on-site service contracts.*
- o Imposes diluted version of installation reporting requirements.*
- o Contractor maintains the accountable records of all property used.*

ON-SITE ACCOUNTABLE CONTRACTORS

If the contractor is accountable for property other than NEMS centrally reportable equipment, either additional property record systems must be used or NASA must retain accountability by also including the IPGP clause with its applicability limited to those non-NEMS items.